

# PULP & PAPER

*Editorial Board*

VOL. 25 NO. 4



THE JOURNAL OF PULP AND PAPER INDUSTRY  
In this latest Executive Conference of the Institute of Paper Technology, the  
Board of Experts discuss Papermaking Plant  
and the latest developments in the industry.  
Published by the Institute of Paper Technology, 100 N. 1st St., St. Paul, Minn.

it's  
**OK**

let'er  
go



...through thick and thin with OK  
**Super paper-trimming knives**

Actual tests made in America's largest paper mills and printing plants prove that OK Knives deliver 25% to 40% longer service. This means greater production at less cost. OK Knives are made of the finest alloy steel specially hardened to stand the heaviest cutting . . . steel that holds an ultra keen edge.

Standard OK Super Knives are beveled and hardened for practically all types of cutting. For unusually tough jobs like trimming aluminum foil, cellophane, glued board, rubber, plywood, etc., these knives are available in special bevels and hardnesses.



Manufacturers of  
OK SLITTER KNIVES  
CHIPPERS • TRIMMERS  
REVOLVING CUTTERS

**GO WITH OHIO GREEN**

**THE OHIO KNIFE CO.**

CINCINNATI 23, OHIO



food  
for  
thought...

### CAUSES OF FOREST FIRES

1. Fires caused by careless smokers... 19.8%
2. Fires caused by careless debris .... 18.7%
3. Fires caused by careless campers... 4.7%
4. Fires caused by incendiaries ..... 30.3%
5. Fires caused by lightning ..... 9.3%
6. Miscellaneous causes ..... 17.2%

Protection of forests from fire is by far the biggest job in the vast new Tree Farming program taking root across the nation.

Hundreds of acres of trees can be destroyed in an hour by uncontrolled fire; and in the Pacific Northwest, for example, it takes about 80 years to grow a new crop of trees. Also, fire usually destroys all the trees in its path leaving no seed trees to replant the burned over area. This means months of work in planting thousands of seedlings by hand.

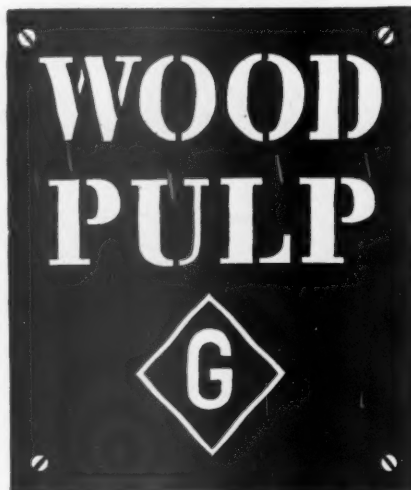
Weyerhaeuser loggers help out in fire prevention by controlled burning of slash in newly logged areas, as required by state law. Lookout stations and fire roads aid our fire-fighting crews and equipment. Cooperative fire-fighting and prevention methods have been worked out with other private companies and government agencies.

You, the public, can help the 2,980 Tree Farmers throughout the country by being more careful with fire in or near forest areas—and by reporting fires promptly. *Everybody* loses when a forest burns... locally and nationally, suppliers and users of lumber, woodpulp and other forest products.



**WEYERHAEUSER**

*Established 1886*



"Light tomorrow with today!"

ELIZABETH BARRETT BROWNING

The things that make the Pulp and Paper Industry the great world force that it is today—research, experiment, sound management, competent personnel, unparalleled resources and facilities—these self-same factors will even more impressively, "light tomorrow."



## **GOTTESMAN & COMPANY**

— INCORPORATED —

100 PARK AVENUE • NEW YORK 17, N. Y.

EUROPEAN OFFICES: Birger Jarlgatan 8, Stockholm, Sweden





## A MILLER FREEMAN PUBLICATION

Publication Office, Emmett St., Bristol, Conn.

Executive, Editorial and Advertising Offices  
SEATTLE—71 Columbia St. (4); MA 1626

Other Editorial and Advertising Offices

NEW YORK—370 Lexington Ave. (17); MU 3-9294

CHICAGO—55 East Washington; ST 2-1100

NEW ORLEANS—3518 Dante St. (18); AM 2762

VANCOUVER, B. C.—675 W. Hastings St.; MA 7287

534 SW Third Ave., Portland 4, Ore.; 121 Second St.,

San Francisco 5; 815 Wilmer St., (17) Los Angeles

Printed in U. S. A. Copyright 1952 by Miller

Freeman Publications, Inc. All rights reserved.

MILLER FREEMAN . . . . . PRESIDENT

MILLER FREEMAN, JR. . . . . SECRETARY-TREASURER

PULP & PAPER STAFF

LAWRENCE K. SMITH . . . . . MANAGER

ALBERT WILSON . . . . . EDITOR

RALPH DAVID . . . . . ASSOCIATE EDITOR

CHARLES L. SHAW . . . . . ASSOCIATE EDITOR

WILLIAM J. KREBS . . . . . ASSOCIATE EDITOR

Production Mgrs.: Lucile Ayers (Adv.) and Elsie Campbell (Edit.); Business Rep.: M. F. Bosworth. Field Editors:

L. H. Blackerby, Stuart Leate, A. W. Ponsford. Forestry

Editor: W. E. Crosby. Readers-Advertisers Service: Virginia

Meenagh, Dorothy Bell.

### At Four Score Years, His Battle Goes On

For 50 years or more, the sulfite industry has assigned some of its best brains to trying to find economic solutions to the mill effluent problems. But consider the chief engineer of the New York City board of estimates. He has been waging almost a one-man battle against water pollution in the New York area since 1907 and, according to a story in *New Yorker* recently, he is going to have to quit this year. His name, John C. Riedel, and the reason he has to quit—he will be 80 years old this year and has to retire! But he points with pride to a 60% sewage disposal for the New York area—predicts the job will be completed in five or six years and the East River will be back in the condition it was in 100 years ago.

### The Newsprint Outlook Brightens

With completion of the Duncan Bay newsprint mill on Vancouver Island, with Celanese planning to make newsprint at Castlegar, B.C., with another Powell River mill project, a new machine already ordered for next year for West Tacoma (Wash.) Newsprint Co., with Crown Zellerbach' and other mills speeding up and improving their newsprint machines, it is possible the newsprint situation could very rapidly take on a better supply aspect for the publishers. However, some of them are hollering to the government to help them in the price matter—the same papers that usually bemoan government interference in business.

Equally important in relieving the newsprint situation is the expansion in the South—the new two-machine, 300,000 tons yearly Bowater Southern Corp. mill being built in Tennessee (see exclusive Sir Eric Bowater interview, *PULP & PAPER* May issue, page 30). Underlining the improved situation is the decision of Southland Mills in Texas to defer plans for a third machine.

Production speed-ups at Bowater's Newfoundland, Baie Comeau and other eastern Canadian mills and newsprint expansion in England have all been ameliorative factors.

The complaint was that many of the smaller country or small town newspapers had been pinched. It does not take a lot of newsprint to help them. And for any papers, large or small, just enough newsprint for a few more pages a day would be a blessing—as these extra pages would probably be almost entirely advertising.

### Big Increase in Paper Uses

"Few people seem to realize (U. S.) consumption of paper has increased over 61% in just six years—from 19,700,000 tons to 31,900,000 tons. Population increased only 10% in that time, so a large proportion of this increased use must be due to development of new paper products and new paper uses."—D. C. Everest, president, Marathon Corp.



*PULP & PAPER* circulates all over the world.

It is read in virtually every pulp and paper company office and mill throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand. It is read in many other offices and mills in Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Holland, Czechoslovakia, Italy, Spain, Switzerland, Soviet Russia, Poland, Yugoslavia, India, Pakistan, Israel, South Africa, China, Japan, Formosa, both near and far around the world, where pulp and paper are made.

### A New Kind of Safety Contest

Kimberly-Clark Corp. has come up with what seems to be a smart bit of psychology to improve the safety records in their mills.

"Careless Kaycee" is a much-bandaged and crippled mannikin dressed to resemble a Kimberly-Clark employee. He is the unwelcome month-long guest of the mill which has most off-duty accidents in the preceding month. And mill departments with the greatest frequency rate for off-duty accidents are his particularly assigned caretakers.

Actually, it's only used in a contest between Neenah and Kimberly mills, and the contest is based on both on-duty and off-duty accidents. But we think it is an idea that could be utilized in other companies; more broadly, too.

### Importance of Pulp and Paper

"Without the healthy operation of the pulp and paper industry, the modern world would collapse."—E. W. Tinker, executive secretary, American Paper and Pulp Association.

### None to Compare with Wood Fiber

"Men of the technical world tell us they know of no other raw material—of comparable economic advantages, in addition to sustained yield—which has the variability and adaptability of pulp and paper's wood fibers."—E. W. Tinker, executive secretary, American Paper & Pulp Association.

#### IN THIS ISSUE:

New Projects in the South . . . 20	Management & Safety . . . . . 56
Bark Burning in Virginia . . . 22	by M. J. Foley . . . . . 56
Texas Mill Addition . . . . . 28	Rayonier Starts Work at Do-
Appleton Executives' Confer-	tortown, Ga. . . . . 59
ence . . . . . 32	Andre Paper Box Co. . . . . 62
Appleton Institute—Paper-	Masonite Corp. Moves West . 66
making Fiber . . . . . 36	PULPWOOD SECTION:
Practical Slime Control	Fire Protection in Lake
by Chester T. Beals . . . . . 40	States . . . . . 70
Northwest'n Superintendents 44	Pacific Coast Wage Confer-
International Paper Co. . . . 46	ence . . . . . 80
Scott Paper Co.'s Board Meet-	Automatic Jordan Plug Con-
ing . . . . . 48	trol . . . . . 89
Bowater's Key Men . . . . . 53	PERSONALS: Pacific . . . 60
	Canada . . . 26 South . . . 60
	East . . . . . 54 Midwest . . 82



*PULP & PAPER* is published monthly, except July, when publication is semi-monthly, at Bristol, Conn., by Miller Freeman Publications, Inc. Subscription prices for 13 issues per year (12 monthly issues and also the valuable and comprehensive reference issue entitled the *World Review Number*) are as follows: In the United States, Canada, Mexico and other Pan American Union nations—\$3 for one year or \$5 for 2 years. In other countries—\$4 for one year and \$7 for 2 years. Entered as second class matter Dec. 4, 1951, at postoffice, Bristol, Conn., under the Act of March 3, 1879. Postmaster: Please send Notice 3579 to *PULP & PAPER*, 71 Columbia St., Seattle 4, Wash.

# No roof needed with the ELLIOTT OUTDOOR SPLASHPROOF MOTOR



**SAVE THE COST OF HOUSING** for motor-driven pump units, by using motors that supply their own housing—protecting against wind-driven rain, mist, dust, sand, snow, or sleet. Motors you can set up outdoors, wherever is most convenient for the work they have to do.

Elliott "Fabri-Steel" construction permits motor design ideally suited to the need, providing the rigidity, crack-proof strength, and rugged endurance which combine with other Elliott refinements to produce a motor outstandingly dependable, no matter what the duty or conditions. It's a natural for any drive.

Available from third size above NEMA frames and larger. Write for bulletin on the motor you need.



The Elliott Outdoor Motor has gone over big. It's the direct answer to the present high cost of building pump houses and other expensive protection for motor-driven equipment.

## ELLIOTT Company

DEPT. PP

**Ridgway Division  
RIDGWAY, PA.**

PLANTS at: JEANNETTE, PA. • RIDGWAY, PA.  
AMPERE, N. J. • SPRINGFIELD, O. • NEWARK, N. J.  
DISTRICT OFFICES IN PRINCIPAL CITIES



R2-10

4

PULP & PAPER



A few of the 30 new 4-inch Monel table rolls Harding-Jones has installed in place of the old 2-inch rolls. Though the larger size provides more surface for carrying away water draining from stock, wall thickness of only .109" makes them light and easy in handling, yet strong and corrosion-resisting in use.

## How to "table" your table roll problems

Is corrosion making your table roll surfaces rough? Are they accumulating slime and fibre much too quickly . . . requiring frequent cleaning?

Is roll whip making rolls crooked and useless . . . causing extensive straightening and junking and non-productive down time?

Then you'll be interested in how one company, The Harding-Jones Paper Company of Middletown, Ohio, overcame these costly difficulties. They installed table rolls made of Monel®.

Why Monel? Because Monel's smooth, corrosion-resisting surface discourages slime and fibre accumulation. And Monel's high strength and rigidity, make

possible light thin-walled rolls that withstand roll whip and give longer service with less interruption . . . lower operating cost.

Perhaps Monel table rolls are what you need to overcome corrosion, vibration and distortion. Investigate Monel, whatever your problem.

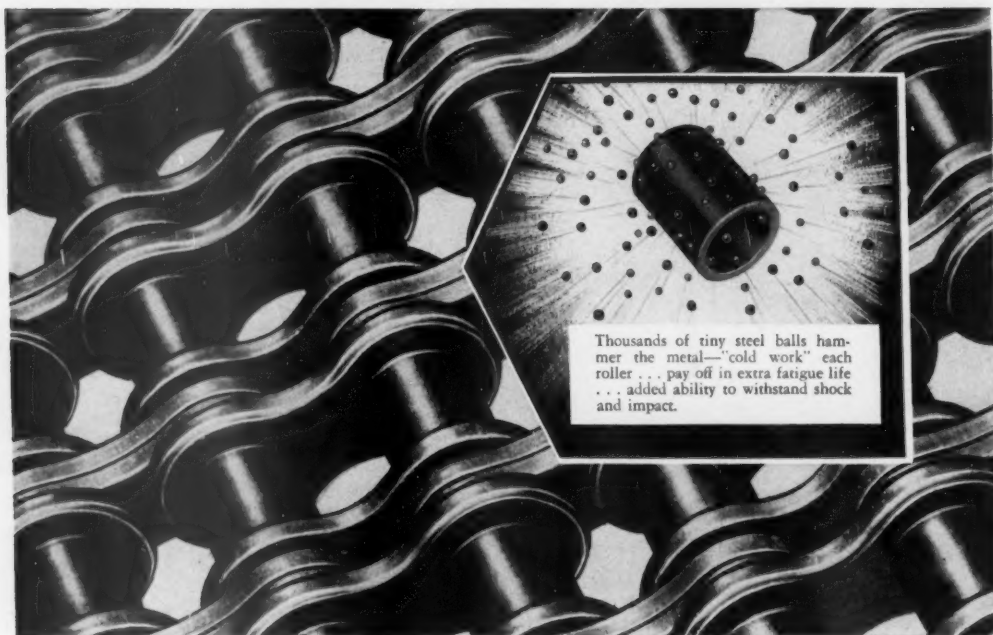
But remember, because Monel, like Nickel and other Nickel Alloys, is on extended delivery, it pays to anticipate needs as far in advance as possible. See your local distributor or write Charles J. Brown at Inco for information on sizes, prices and availability.

**THE INTERNATIONAL NICKEL COMPANY, INC.**  
67 WALL STREET, NEW YORK 5, N. Y.

**NICKEL  ALLOYS**

**MONEL® • "R"® MONEL • "K"® MONEL • "KR"® MONEL  
"S"® MONEL • NICKEL • LOW CARBON NICKEL • DURANICKEL®  
INCONEL® • INCONEL "X"® • INCOLOY • NIMONICS**

# Get the roller chain that gives you SHOT-PEENED rollers...



Thousands of tiny steel balls hammer the metal—"cold work" each roller... pay off in extra fatigue life... added ability to withstand shock and impact.

## look for the darkened rollers!

**T**HERE are sound reasons for the universal acceptance of Link-Belt Precision Steel Roller Chain. Two of them—shot-peened rollers and Lock-type Bushings—are shown here.

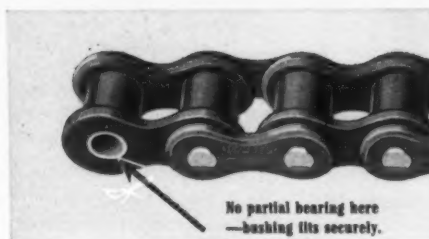
Others include Link-Belt's rigid material selection and controlled heat treating—your assurance of absolute uniformity with no weak members.

Whether it's for drive or conveyor service, you can get the best in roller chain from the complete Link-Belt line—single and multiple widths, in  $\frac{3}{8}$ " through 3", and double pitch, 1" through 3". Next time you need roller chain, call the Link-Belt office near you.

**LINK-BELT**  
PRECISION STEEL ROLLER CHAIN

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in Principal Cities.

12,617



### Lock-type Bushings increase ability to withstand shock loads

A special manufacturing process securely locks the inside sidebars on the bushing, preventing lateral movement of the sidebars and eliminating a common cause of stiff chains. This Link-Belt development is applied on roller chains through 1" pitch and double pitch roller chains through 2" pitch.



# Barks all pulp woods Economically!

**Improved  
Streambarker**

**THIS BARKING UNIT** produces cleaned logs on a true production basis at a low overall cost. Southern pine is now being barked successfully at a rate of 7850 lineal feet per hour. Reasonably round, straight oak, ash, gum, hackberry and cottonwood logs are being processed at over 5000 lineal feet per hour!

## **YOU GAIN THESE ADVANTAGES WITH THE IMPROVED *STREAMBARKER***

1. Fast continuous hydraulic barking.
2. Barks all species of wood.
3. Cleaner logs — dozy wood, imbedded dirt, cinders and fly ash are easily removed.
4. Low wood loss — hydraulic pressures can be varied.
5. Handles logs 4 to 8 feet in length and 4 to 24 inches in diameter.
6. Only 4% increase in bark moisture.

*Get complete information on the improved model D Streambarker by contacting your nearby A-C representative—or write Allis-Chalmers, Milwaukee 1, Wis.*

Streambarker is an Allis-Chalmers trademark.



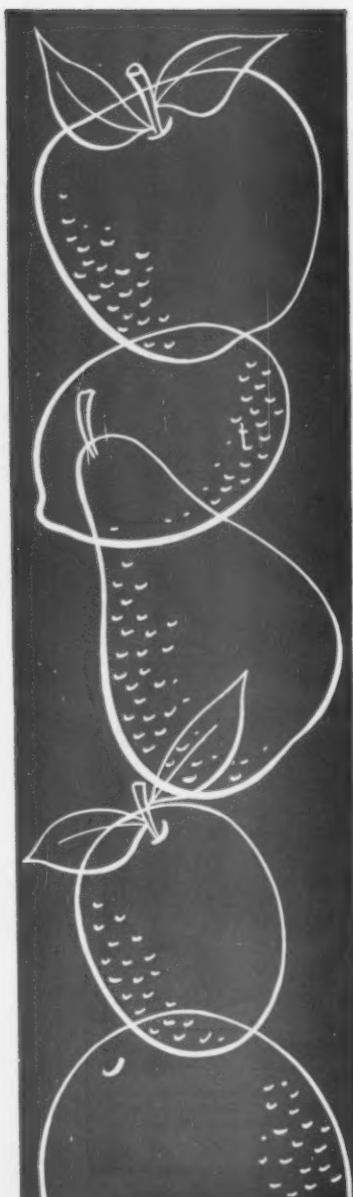
Two Streambarkers are used in hydraulic barking of aspen logs in this midwestern aspen strawboard plant.

3749

# **ALLIS-CHALMERS**








## **COLOR** sells more produce ... helps you sell more produce men!

**HERE'S COLOR** that does a sales job and a product-identification job at the same time. It's an exclusive for fiber boxes... only with these containers is it practical to repeat the outside color on the inside, too.

When you show such containers to produce men, point out how a blue inside enhances the red of the tomatoes... or how a green sets off the yellow of the lemons. This added sales appeal can pay off at the produce counter when the boxes are used for display.

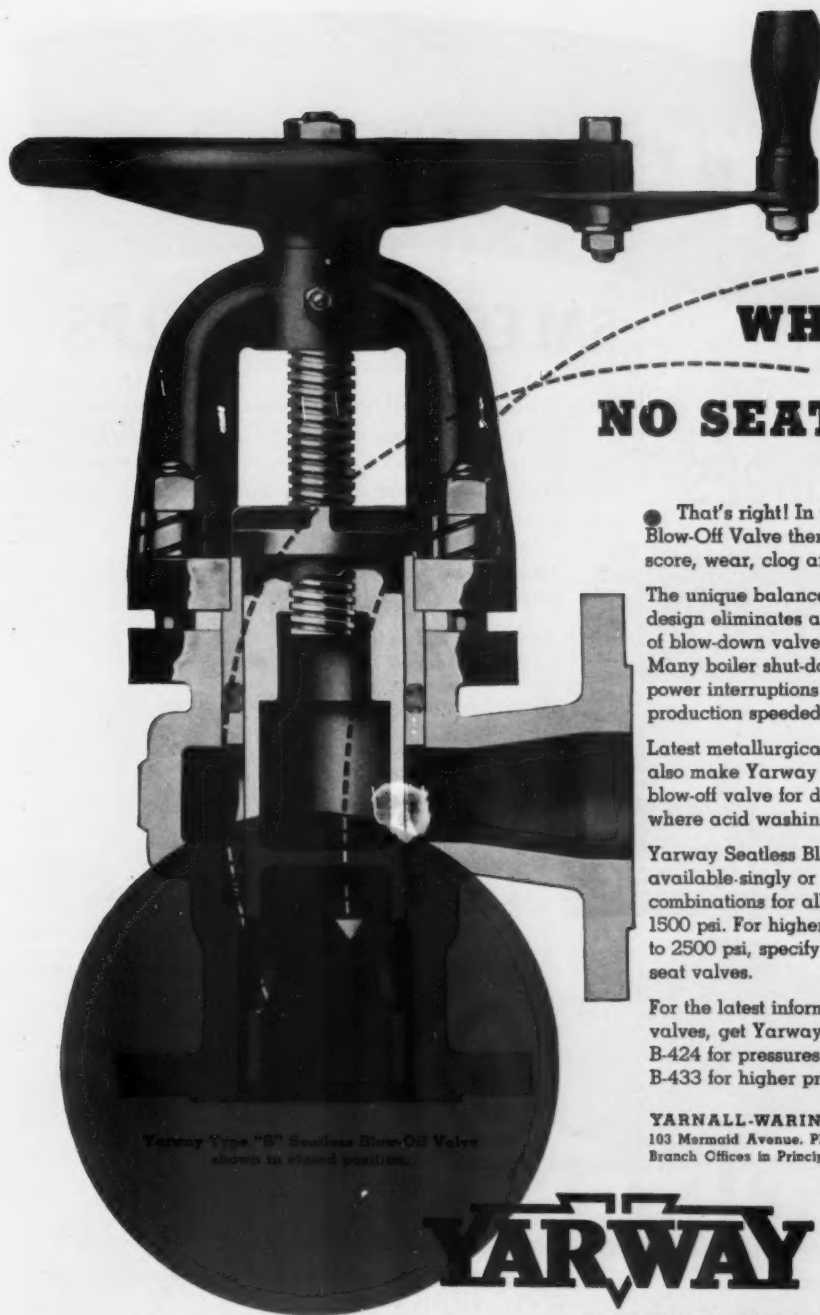
This "inside-outside" sales story for color is well worth passing along. And as for the proper choice of dyes... well, Du Pont alone offers you hundreds of shades in colors to choose from. Our Technical Staff will help you in your selection for each specific application. Just write: E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.



*FOR ANTI-CORROSION*

BETTER THINGS FOR BETTER LIVING THROUGH CHEMISTRY

Du Pont Dyes



Yarway Type "E" Seatless Blow-Off Valve  
shown in closed position.

## WHAT? NO SEAT?

● That's right! In this Yarway Blow-Off Valve there is no seat to score, wear, clog and leak.

The unique balanced sliding plunger design eliminates a common cause of blow-down valve trouble—the seat. Many boiler shut-downs are saved . . . power interruptions avoided . . . production speeded.

Latest metallurgical improvements also make Yarway the ideal blow-off valve for difficult service where acid washing is used.

Yarway Seatless Blow-Off Valves are available singly or in tandem combinations for all pressures up to 1500 psi. For higher pressures up to 2500 psi, specify Yarway Stellite-seat valves.

For the latest information on blow-off valves, get Yarway's newest catalog—B-424 for pressures to 400 psi, B-433 for higher pressures.

**YARNALL-WARING COMPANY**  
103 Mermoid Avenue, Philadelphia 18, Pa.  
Branch Offices in Principal Cities

# YARWAY

## BLOW-OFF VALVES

**STOP BLOW-DOWN TROUBLES—KEEP BOILERS ON THE**



# pre

## SALES GRADE PULPS

### ADVANTAGES

#### TO PRODUCER

- 1 Improved pulp quality at low cost . . . produces brighter, cleaner pulp.
- 2 Easy control of pulp characteristics through varying the degree of pre-beating.
- 3 Better formation with more uniform drying.
- 4 Pre-beating results in savings to customer and greater marketability.

#### TO PURCHASER

- 1 Substantial power savings.
- 2 Ability to use greater quantities of hard-to-beat Southern and Western pulps, with present equipment.
- 3 Pulps can be adjusted to meet your specific needs by control of the pre-beating process.

Manufactured  
in the United States by  
Valley Iron Works Company,  
Appleton, Wisconsin



# SUTHERLAND

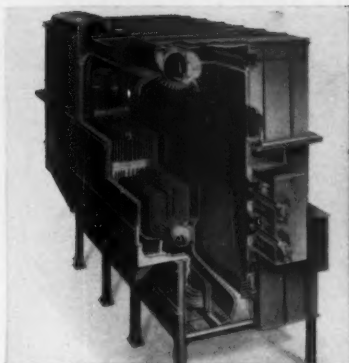


Designed, Engineered, Serviced

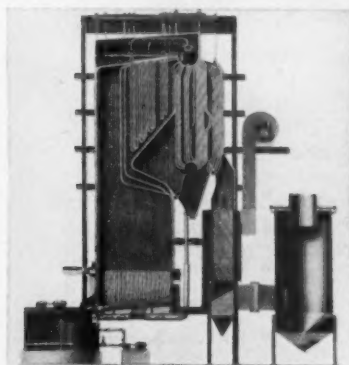
continuous beating systems

by SUTHERLAND REFINER CORPORATION

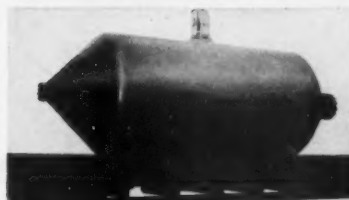
TRENTON 8, N. J.



**BOILERS**—B&W boilers have a long and outstanding record for low-cost steam generation in pulp and paper mills. They span a range of types and sizes to satisfy every requirement of capacity, space, temperature, pressure, fuel, and method of firing. Each type combines the dependability of job-proved design with every economy of standardization commensurate with flexibility.



**RECOVERY UNITS**—Efficient chemical recovery and reduction, along with maximum steam generation per ton of pulp, are combined with economical operation and maintenance in B&W Recovery Units. Installations for burning waste liquors of the kraft, soda, and bisulphate (magnesium, calcium, and ammonium) processes have a total recovery capacity of over 16,000 tons. B&W recovery units were the first provided with automatic soot blowers to eliminate routine hand lancing.

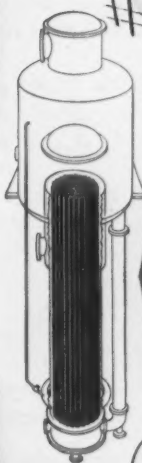


**PRESSURE VESSELS**—Dependable welded processing units, in sizes and shapes for any paper mill requirements, are fabricated by B&W from carbon, alloy, or clad steels. All vessels are x-ray inspected and stress relieved.

July 1952

time-  
proved  
aids  
to

**Low Cost**  
production



**TUBES**—Seamless and Welded steel tubes are made by B&W in a range of carbon, alloy, and stainless steel analyses to satisfy every requirement for condensers, evaporators, heat exchangers, recovery units, boilers, and other paper mill applications. Modern improvements in pulp and paper processes impose a greater variety of tubing requirements than ever before. B&W Tube Representatives offer a wealth of experience on tubing problems to help users determine the analyses best suited for specific operating conditions.



**BABCOCK  
& WILCOX**

**THE BABCOCK & WILCOX COMPANY**

161 East 42nd Street, NEW YORK 17, N. Y.

P-766

11

# HOKKER...

*basic source for*

## PULP and PAPER *chemicals*



LOADING LIQUID CHLORINE . . .  
one of many careful operations  
that preserve the high purity of  
chlorine from the efficient Hooker  
Type "S" Cells, at Niagara Falls  
and Tacoma, to your plant.

More than 50 large U. S. pulp and paper producers specify Hooker Chemicals for their processing requirements, such as chlorination and bleaching of pulp, caustic extraction, and de-inking of paper scrap.

These heavy users of chemicals find that Hooker purity and shipment-to-shipment uniformity are valuable aids in processing and in controlling uniformity of the finished product.

Whatever your needs for chlorine, caustic soda, or their many derivatives, you will like the way Hooker works to ease your supply problems. As fast as stocks are ready, they are shipped to you on dependable schedules, carefully point-checked to insure delivery when promised.

Production of Hooker Chemicals is at an all-time peak, and facilities are being expanded to meet new demands as promptly as possible. For up-to-date delivery information, please keep in touch with your Hooker sales representative.

- Caustic Soda
- Chlorine
- Muriatic Acid
- Sodium Sulfide
- Sodium Sulphydrate



FOR  
COMPLETE  
LIST

of Hooker Chemicals, send for  
Bulletin 100, which describes prop-  
erties, typical uses, and shipping  
containers. Please write on your  
business letterhead.

*From the Salt of the Earth*

HOKKER ELECTROCHEMICAL COMPANY

2 UNION STREET, NIAGARA FALLS, N. Y.

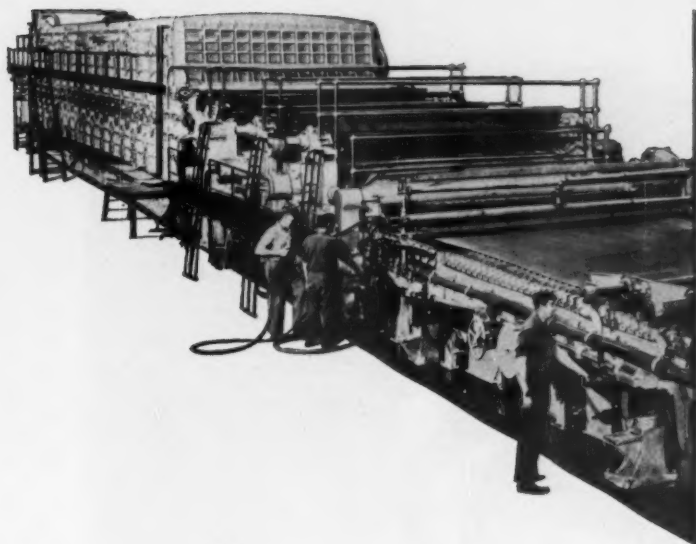
NEW YORK, N. Y. • WILMINGTON, CALIF. • TACOMA, WASH.



1-2115

CHLOROBENZENES • SODIUM BENZOATE • SULFUR CHLORIDES • CYCLOHEXANOL • MONOCHLOROACETIC ACID • PIPERIDINE • CUSTOM HYDROGENATIONS





## There's PROFIT in PULP

- With the ever increasing per capita consumption of paper, the basic material is in proportionately increasing demand.

Rice Barton pulp machines either vacuum or open, will enable you to capitalize on this demand.



RB7-52

### **RICE BARTON CORPORATION**

Worcester, Massachusetts  
*Paper Machine Builders Since 1837*

West Coast Distributor: Ray Smythe • 501 Park Building • Portland, Oregon

**THE MEAD SALES COMPANY**  
230 PARK AVENUE, NEW YORK 17, N. Y.  
20 NORTH WACKER DRIVE, CHICAGO 6, ILL.

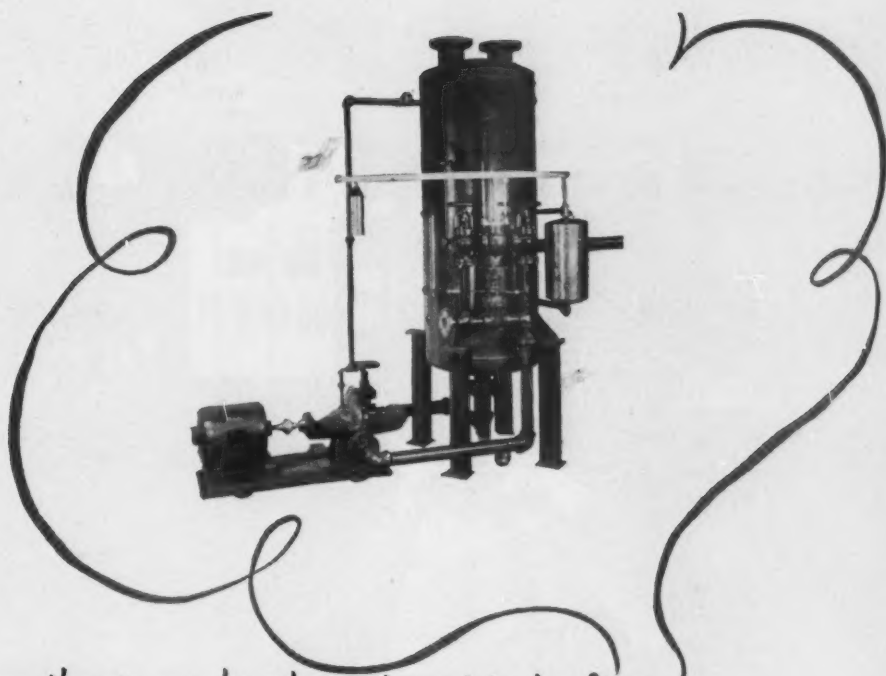


**DISTRIBUTORS OF WOOD PULP**  
BLEACHED AND UNBLEACHED  
CHEMICAL AND MECHANICAL WOOD PULP



In the year of the two summers, Babe the Blue Ox got hay fever. Paul Bunyan pointed her muzzle at a tree and—ACHOO!—Babe sneezed it off clean as a whistle!

A reproduction of this incident from the fabulous life of Paul Bunyan—the sixty-fifth of a series—will be sent on request. It will contain no advertising.



## where there's smoke there's bound to be fire

Here's a quality builder, tonnage booster, steam saver and all-round money maker that has long since become standard equipment on all new paper machines and on many of the older ones—Fulton Dryer Drainage on the Dryer Section.

Already close to 1000 such systems are in service—unshakable and absolute proof that Fulton Dryer Drainage is an indispensable drying aid. Surely where there's so much smoke there must be fire. The foregoing is not addressed to Superintendents with the more modern machines under their command for they have Fulton Systems. Rather, it is aimed at the top executives and Superintendents operating older machines—pitched to reach mills with smaller machines. It is there that the hesitation is greatest, the need of better drying conditions most pressing.

If we of Midwest-Fulton can prompt you of the older mills, and you of the smaller mills, to investigate Fulton Dryer Drainage, you'll want Fulton Dryer Drainage. If you'll study it on some of the 1000 machines that have it, you'll go still further and demand it.

- Applicable to older and smaller machines? Absolutely yes.
- Too costly? No. The cost (in the form of loss) is incurred by being without it.

*Get Technical Bulletin—Now*



A typical Fulton Sectional Drainage Unit for small machines.

10% to 30% production increase guaranteed.

Positive reduction in steam costs—even with tonnage gains.

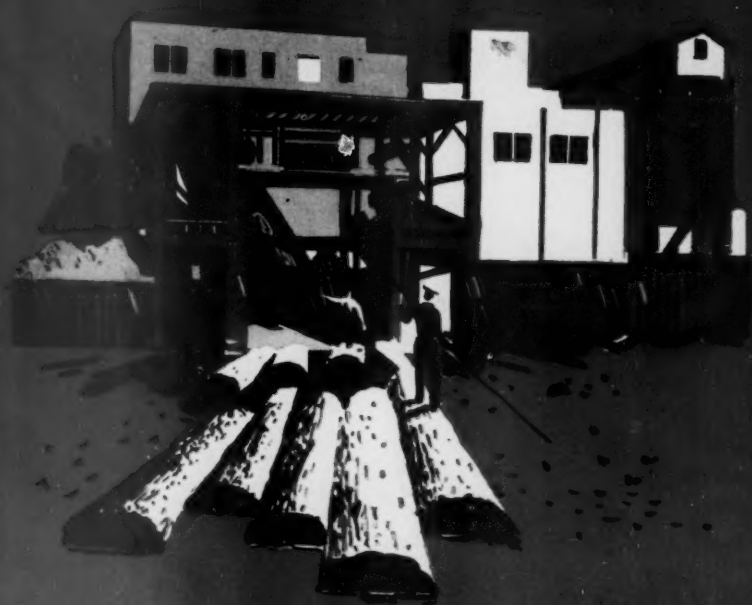
Improved quality. Uniform drying. Less cockle or curl.

Moisture content control.

No over-drying.

Engineering survey-machine study. No obligation.

**THE MIDWEST • FULTON MACHINE CO.**  
DAYTON 3, OHIO



## WHITER, CLEANER PULP

Puget Sound, long one of the greatest producers of unbleached sulphite wood pulp in the world, has now added fully automatic equipment enabling it to produce bleached pulp . . . whiter and cleaner than ever, yet retaining the long-fibre strength for which Puget has always been noted.

# PUGET SOUND

PULP AND TIMBER COMPANY

BELLINGHAM • WASHINGTON



# The Science of RIGHT-ANGLE SPEED REDUCTION



## An Applied Science!

The transmission of motive power at right angles is a science of gear application which has taken form in Pacific-Western right-angle speed reducers. More than a half century of experience in gear making and gear application have gone into the design of our complete line. Speed reduction is an exact science, and is one in which we are eminently qualified by experience to meet the specialized needs of any industry.

for western gears...  
it's WESTERN GEAR

9136

**Plants** • 414 10th Ave. E. Seattle, Wash.  
2000 N. Imperial Highway, Lynwood (Los Angeles County), California  
1835 Folsom St., San Francisco 2, Calif.  
Belmont (San Francisco Peninsula), California  
117 N. Palmer St., Houston, Texas  
**Representatives** • 930 S. E. Oak St., Portland 14, Oregon  
1728 Champa Street, Denver, Colorado  
Engineering & Machinery Ltd., 1388 W. Broadway, Vancouver, B.C.

**WESTERN GEAR WORKS**   
Manufacturers of PACIFIC-WESTERN Gear Products

**Pacific Gear & Tool Works**

**Plants** Seattle  
San Francisco  
Belmont  
(S. F. Peninsula)  
Lynwood  
(Los Angeles County)  
Houston





photo by Malach, Ottawa

## Heads Up!... Here Come Tomorrow's Headlines

Far up in the Northern wilderness, rugged woodsmen drive their logs downstream. These men supply our civilized world with raw material for one of our most vital products: Paper.

To process logs like these into pulp, more and more mills are converting from calcium base acid to ammonia base acid. Mills that have already made this conversion report many important advantages over the old process.

As additional mills go over to the ammonium bisulphite process, many more thousands of tons of anhydrous ammonia will be required. In an effort to meet this anticipated increase in demand, Spencer Chemical Company is presently rushing construction of a major plant at Vicksburg, Mississippi, which is expected to add 73,000 tons to Spencer's annual ammonia capacity. Target date for completion of this new \$14,000,000 plant is the Summer of 1953.

### AMERICA'S GROWING NAME IN CHEMICALS

Spencer Chemical Company, Executive and General Sales Offices, Kansas City, Mo.  
Plants located at Pittsburg, Kans.; Henderson, Ky.; Charlestown, Ind.; Chicago, Ill.; and  
Vicksburg, Miss. (under construction).



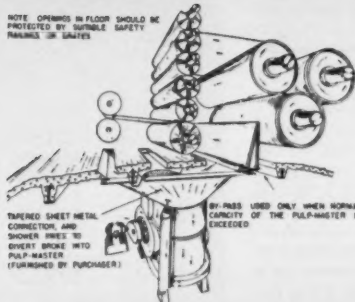
**EASILY HANDLES 3000 POUNDS OF BROKE PER HOUR  
on an economical 35-40-h.p.**

# No. 1 **E.D. Jones Pulp-Master**

Ideal for installation under your paper machine, the Jones No. 1 Pulp-Master will easily handle 3000 lbs. of broke per hour, extracting completely pulped stock continuously through non-clogging perforated plates. Slabs? — sure, slabs up to the full width of your machine can be dropped or thrown in, and are almost instantly disintegrated.

Simple and fool-proof in design and operation, it requires no operators beyond the regular machine crew, and is free from troublesome maintenance problems. Power consumption, economical 35 to 40 h.p.

Three other sizes of Jones Pulp-Master are available with capacities up to 4000 lbs. of broke, or even higher capacities for batch or continuous operation.



NOTE: OPENING IN FLOOR SHOULD BE PROTECTED BY SUITABLE SAFETY FENCING OR GUARDS

TAPERED SHEET METAL CONVEYOR AND SHOWER WIRE TO DIVERT BROKE INTO PULP MASTER (FURNISHED BY PURCHASER)

BY-PASS USED ONLY WHEN NORMAL CAPACITY OF THE PULP-MASTER IS EXCEEDED

## **E.D. Jones**

**E. D. Jones & Sons Company, Pittsfield, Mass.**

**BUILDERS OF QUALITY STOCK PREPARATION MACHINERY**

# NEW SOUTH PROJECTS

## IN TENNESSEE, FLORIDA, GEORGIA, TEXAS

**TOP VIEW**—NEW NO. 4b BAGLEY & SEWALL Paper Machine which started up at Pensacola, Florida, Div. of St. Regis Paper Co., April 5. Ross Engineering Corp. made the hood and ventilating system. The machine is 228 in. wide and designed for 2400 feet per minute.

**BELOW**—View of the GOSLIN-BIRMINGHAM sextuple effect evaporators installed at St. Joe Paper Co., Port St. Joe, Fla., to accommodate the expanded pulp mill production. (Instrument panel is housed at foot of evaporators).

Expansion of southern production facilities has been moving forward since the first of the year with initial construction underway in some cases and work about to begin in others. Completion of the St. Regis' Pensacola, Fla., expansion has been effected and personnel changes covering both that unit and the new mill at Jacksonville, Fla., scheduled for early Fall completion, have been announced. Next in order of advancement is the trebling of the St. Joe Paper Co. at Port St. Joe, Fla.

Under the St. Regis set-up, William R. Adams, recently named to St. Regis' board of directors while already a vice president, heads the pulp and paper manufacturing division. J. H. McCarthy, formerly at Tacoma, Wash., is chief engineer of the division, remaining at Jacksonville until the mill there is completed.

John K. Ferguson has been named resident manager of the Jacksonville mill, while George M. Snyder retains the same position at Pensacola. U. J. Westbrook (see May, Pulp & Paper) serves as production manager for the company's mills in Florida, with headquarters at Pensacola, and John A. McDermott, general superintendent at Jacksonville.

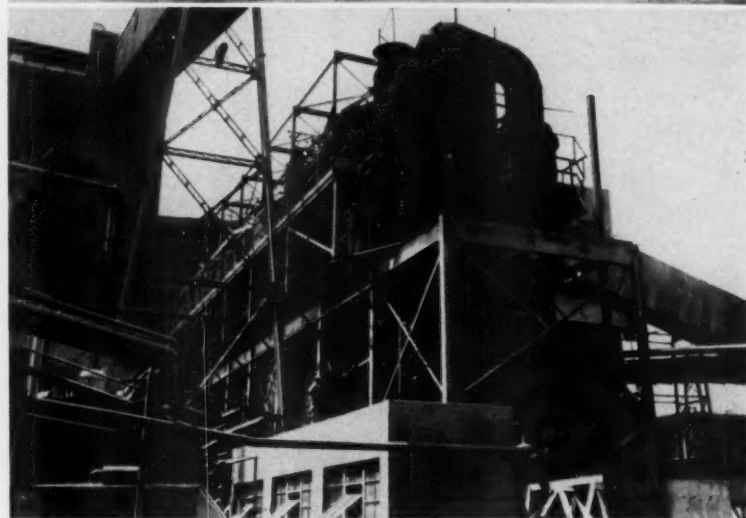
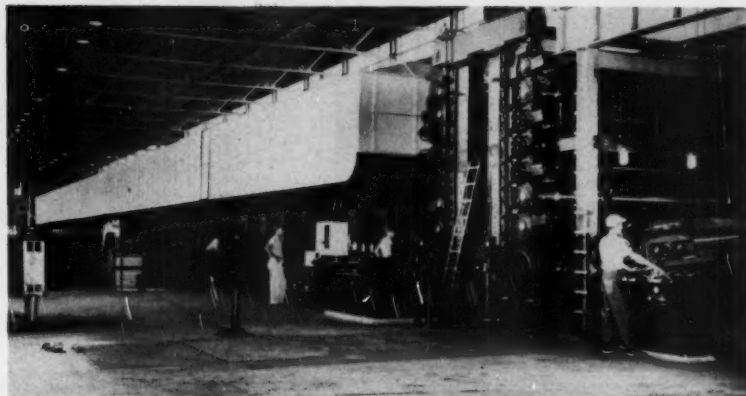
E. A. Murphy, from the Oswego, N.Y., mill, sold recently to Marathon, goes to Jacksonville as new paper superintendent.

J. Arnold Harrison, formerly pulp mill superintendent of No. 2 mill at Pensacola, becomes pulp mill superintendent at Jacksonville, and Wilbur Orr, superintendent of No. 1 mill at Pensacola, becomes pulp mill superintendent of both No. 1 and No. 2 mills.

At Pensacola, construction work has started on the new four story, modern, air-conditioned general office building at the mill site; and construction of the new converting plant's laboratory is nearing completion. Additional warehouse space is being provided. When the new (No. 4) Bagley & Sewall paper machine started on April 5, acceptable paper was coming through in  $\frac{3}{4}$  hour from start-up.

### Other Mills Progress

St. Joe Paper Company is making good progress in expansion of the mill from a present 400 to a future 1200 tons daily capacity. The steel framing is up for the pa-



per machine room expansion; and steel framing up for support of new boilers, electrical generator building, and other accompanying facilities. The Goslin-Birmingham sextuple effect evaporators installed for the expanded capacity, have been tested out "on the line." The instrumentation for the additional evaporator capacity is provided by Foxboro, with the instrument board placed in special housing at ground level beneath the evaporators.

The actual mill site for National Container Corp.'s new Valdosta, Ga., mill is being levelled. The office building for the new mill is almost completed and will be occupied by the contractor's project engineer until the mill force moves in. The railroad spur has been built in.

At Foley, Fla., a new office building is being erected for Paul Honey, the Florida manager for Buckeye Cellulose Corp. As

late as June 1 no general contract work was underway but the erection contracts had been signed with H. K. Ferguson Co., Cleveland, and Duvall Engineering and Contracting Co., Jacksonville, Fla. Norman Gibbs, pulp mill consultant has been spending the greater part of his time in Greenville, S.C., where Sirrine & Co., designing engineering firm is located.

K. O. Elderkin, manager for the Bowater Southern newsprint mill project at Charleston, Tenn., has been busy at the Greenville, S.C., offices of J. E. Sirrine & Co., designing engineers. A contract has been awarded for clearing and leveling the mill site. Oman Construction Co., Nashville, Tenn., has the contract.

Plans for the Rome Kraft Co., a Mead Corp. subsidiary, for erection of a 600 ton daily board mill on a 700 acre Coosa River site near Rome, Ga., have been advancing conservatively. In industry circles it is

## ST. REGIS APPOINTMENTS



**JUSTIN H. MCCARTHY** (left), who has been made Chief Engineer of entire Pulp & Paper Division of St. Regis Paper Co. He is in charge of construction of new mill at Jacksonville, Fla., to be completed late this year. Graduate of Dartmouth, he was with Hardy S. Ferguson for 17 years, built new units of Soundview Pulp and St. Regis Kraft in Washington State before moving to Florida.

**JOHN K. FERGUSON** (right), appointed Resident Manager of the new St. Regis Paper Mill being completed at Jacksonville, Fla. He was Marine Sgt. in Pacific War, graduated from Syracuse U. in 1946, was Bus. Mgr. of Brooklyn Dodgers Meridian Farm Club. Recent years was Mgr. of St. Regis Lumber Div., Pensacola, and has worked on procurement of equipment for Jacksonville mill. Is son of Pres. R. K. Ferguson.

## HUDSON PERSONNEL MOVES



**GEORGE A. BALKO** (left), who has moved to New York City headquarters of Hudson Pulp & Paper Corp., and **JOSEPH L. RICHARDSON** (right), who succeeded Mr. Balko as Resident Mgr. at Hudson's Palatka, Fla., Mills. Charles A. Grondone, V. P. of Operations, made the announcement. Mr. Balko, who will be assigned to special duties in New York, was former Exec. Asst. in Operation for Mead, started with Laurentide in Canada. Mr. Richardson joined Hudson in 1946 from Gulf States Paper. He started in Southern Industry's earlier operations at Orange, Tex., in 1911, was with Moss Point and Braithwaite plants and with Champion Paper.

## ST. REGIS PULP CHIEFS



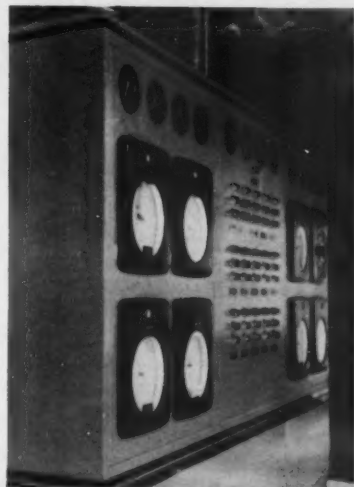
said this mill may have a Beloit bigger than that at Macon Kraft, with the 2000 FPM speed design, driven by another Westinghouse turbine and with higher pressure steam drier rolls.

## Evadale, Texas, Site

Somewhat conflicting information has come from the projected paper mill to be erected at Evadale, Texas. This is the much talked of site examined by a number of well known companies, the latest having been the announced deal by Scott Paper Co. that was abandoned after the company acquired a West Coast mill. Harold Decker, president of Houston Oil Co., has been quoted in various places as saying the mill will be built; while other advices are that the step will not be taken soon.

The mill project is presumed to be carried under the charter of the Evadale Mfg. Co., incorporated under laws of Texas on April 9, 1948, with \$10,000 capital stock, all paid. Officers of the company, as originally listed, are partners or associates of the legal firm of Vinson, Elkins & Weems, 11th floor, Esperson Building, Houston, Texas, and were shown as follows: W. A. Vinson, president; J. G. Lawhon, vice president and treasurer; and Thomas D. McGowan, secretary. The mill project may be considered as being backed by pulpwood from a million acres of forest land. The source of pulpwood supply for a 300 ton mill was certified as "adequate" in May, 1951, by the local office of U. S. Forest Service.

VIEW OF THE FOXBORO INSTRUMENT PANEL for the new Gaslin-Birmingham evaporator installation at St. Joe Paper Co.



**J. ARNOLD HARRISON** (left), former No. 2 Mill Pulp Supt. at Pensacola, Fla., has been made Pulp Mill Supt. of the new St. Regis operations at Jacksonville, Fla., now being built. He will report to **JOHN A. McDERMOTT**, new Gen. Supt., whose appointment we reported in May.

**WILBUR ORR** (right), No. 1 Mill Pulp Supt. at Pensacola, becomes Pulp Supt. for both No. 1 and No. 2 Mills at the Pensacola Kraft Center. E. A. Murphy, from Oswego, N.Y., also will report to Jacksonville as Paper Supt., also under Mr. McDermott.

## APPOINTMENTS IN SOUTH



**WILLIAM M. EBERSOLE** (left), Pulp Mill Supt. at Macon Kraft Co., Macon, Ga., since its early days, was made General Supt., succeeding the late Ronald W. Childers, who died of an unexpected heart attack.

**EARL HOBAUGH** (right), Gen. Supt. at St. Joe Paper Co., St. Joe, Fla., who was recently named Asst. Vice Pres., and will step up to Production Mgr. as soon as this year's expansion is completed.

## Dr. Freudenberg to Talk At U. S. Meetings in Fall

Dr. Karl Freudenberg, director of the Chemisches Institute, Heidelberg University, Heidelberg, Germany, has accepted an invitation to come to America in September and possibly October to address pulp and paper industry groups.

World renowned for his work in lignin and cellulose research, from the standpoint of organic chemistry, Dr. Freudenberg, now 66, is coming with his wife and plans a coast to coast trip.

Joseph L. McCarthy, of Seattle, chairman of the 6th annual Pacific Section TAPPI seminars, was responsible for bringing Dr. Freudenberg to this country. The latter will give four lectures at each of two seminars, at the Multnomah hotel in Portland, Ore., Sept. 17 and at the University of Washington, Seattle, Sept. 25, on: (1) organic chemical work on the constitution of cellulose; (2) natural lignin and its constitution; (3) artificial lignin and its constitution, and (4) lignification of plant tissue.

He will also address the Tri-Way U.S.-Canadian convention in Victoria, B. C., 25-26.

W. F. Hathaway, of Kalamazoo Vegetable Parchment Co., Parchment, Mich., is in charge of arranging his other appearances in the U.S.

## Alberta Mill Project Reports Capital Raised

International Resources, Inc., Seattle, has obtained tentative approval of the Red Deer, Alberta, city council for construction of a \$13,000,000 groundwood and semi-chemical (export) pulp mill.

Richard Randle, New York financier, and Herman M. Simpson, Seattle engineer, told the council that they have arranged required capital. Construction must be started by July, 1953, and completed by October, 1954.

It is understood that a 2000 square mile pulpwood reserve in Alberta has been set aside.



# ELECTRONICALLY-CONTROLLED STEAM GENERATING UNIT BARK BURNING IN VIRGINIA

By A. McGillivray

Consulting and Application Engineer, Westinghouse Electric Corp., Baltimore, Md.

A new electronic bark burner control at the West Point, Va., mill of Chesapeake Corp. of Virginia automatically regulates the flow of bark into the main boiler in response to load demand. The speed with which this electronic drive operates equals or exceeds the speeds at which the load changes.

The conveyORIZED log- and bark-handling facilities at Chesapeake Corp. are shown in Figure 1. The conveyor system is designed to transfer logs quickly from the three means of transportation by which logs are usually received at the mill—rail, ship, or truck. A fourth belt brings logs from the storage yard where a "war-surplus" shipyard gantry crane was ingeniously renovated and now is used to load the conveyor (see Figure 2). It also unloads trucks, picking up an entire truck load at one time. A 70-foot control tower, Figure 3, resembling the familiar forest fire tower, is strategically located so that the operator can observe and control all conveyors and the barking drums from a central location.

With previous bark burners, only 75 to 80% of the bark could be used. The remainder of the bark was used to fill swampy land. Since this was not an efficient use of by-product, the new bark burner was installed to make the most efficient use of this material.

Like the log-handling equipment that is designed to handle logs arriving by all types of transportation, the furnace is designed to use all available types of fuel, which include bark, coal, and oil. The

## A "Revolutionary" Type of Bark-Burning Unit

This article, especially prepared and written for PULP & PAPER, describes new electronic controls for a so-called new "revolutionary" type of steam generating unit designed for efficient bark burning, installed at Chesapeake Corp. of Virginia's mill at West Point, Va.

Combustion Engineering-Superheater Inc., developed this steam generating unit, which combines flash-drying, suspension burning and extreme turbulence as its "answer" to a major fuel burning problem of this industry. The boiler is also reported to support a higher rate of woodpulp production, which is no small factor along with other economic advantages.

Following this article is a description of the C-E unit and its general advantages by R. H. Ellwanger, power superintendent at Chesapeake Corp.

normal fuel is bark, which travels by conveyors from the barking drums to the hoppers. Two 100-hp motors drive the 24-knife cylindrical hoppers which chip the bark into the best size for burning. When the hoppers are not operating, 24 volts is applied to one phase of each motor to provide enough heat to prevent condensation. The bark then travels up by a conveyor system so that it enters the building about 75 feet above the ground. A few feet inside, the bark is dropped into a bin. The bin also has a conveyor on the opposite side which brings in coal when that is the desired fuel. When oil is used, the fuel is brought in directly to eight oil burners in the furnace.

Screw feeds in the bottom of the bin feed material to spreader stokers. Because of the wide difference in caloric value of fuels used, a wide-spread range was required for the screw feeds. The

boiler design is unique. High-temperature air is used with high static pressure to create an excessively turbulent condition in the furnace. Approximately 80 to 85 per cent of the total air for combustion is used for overfire air and the remainder for undergrate air.

A Mototrol electronic drive was selected which will give a speed range of 50 to 1. Four 5-hp drive motors (see Figure 5) are totally enclosed, fan-cooled d-c gearmotors with output speeds of from 25 down to 1/2 rpm. The screws can be reversed if desired. The drive is exceedingly flexible and responsive to load changes merely by varying fuel supply. This drive equals or exceeds the speeds under which load changes can be effected. This is essentially true because approximately 80 per cent or more of the fuel as fired is burned in suspension, and the chain grate stoker operates with a very thin fuel bed. The reason that suspension burning is such a success is due, to a large part, to the fact that the fuel is well hogged.

All power equipment is located on the operating floor in a compact arrangement as shown in Figure 6. The central panel has the usual indicating and recording instruments, including a smoke density recorder, feed-water flow and pressure recorder, water level indicator and recorder, steam flow, air flow, and steam pressure recorders, percent oxygen, and eight point temperature recorder. The principal control switches are located on this central panel. The start-stop push-buttons, ammeters, and speed-adjusting potentiometers for the bin screws are at this location. Also, start-stop buttons and indicating lights for the chain grate stoker, spreader stoker, induced draft fan and forced draft fan are located here.

To the right is the power center consisting of a 500-kva air-cooled power transformer, close-coupled to high-voltage switchgear. Voltage is reduced by the transformer from 2400 to 600 volts, three

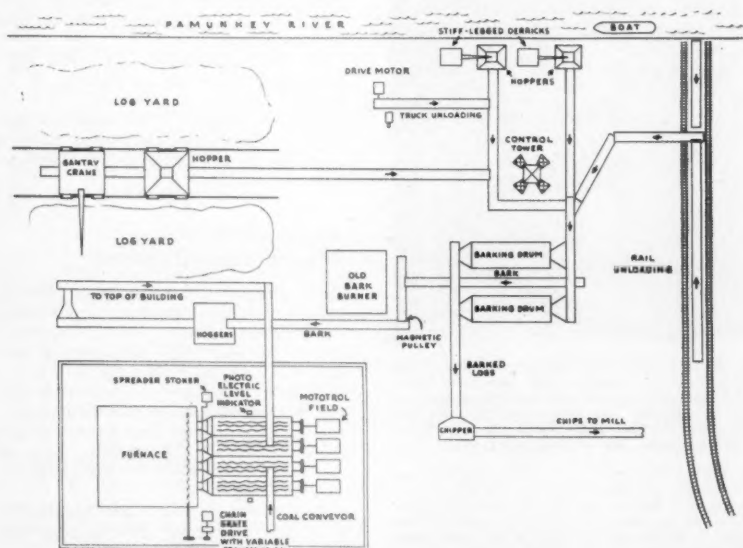
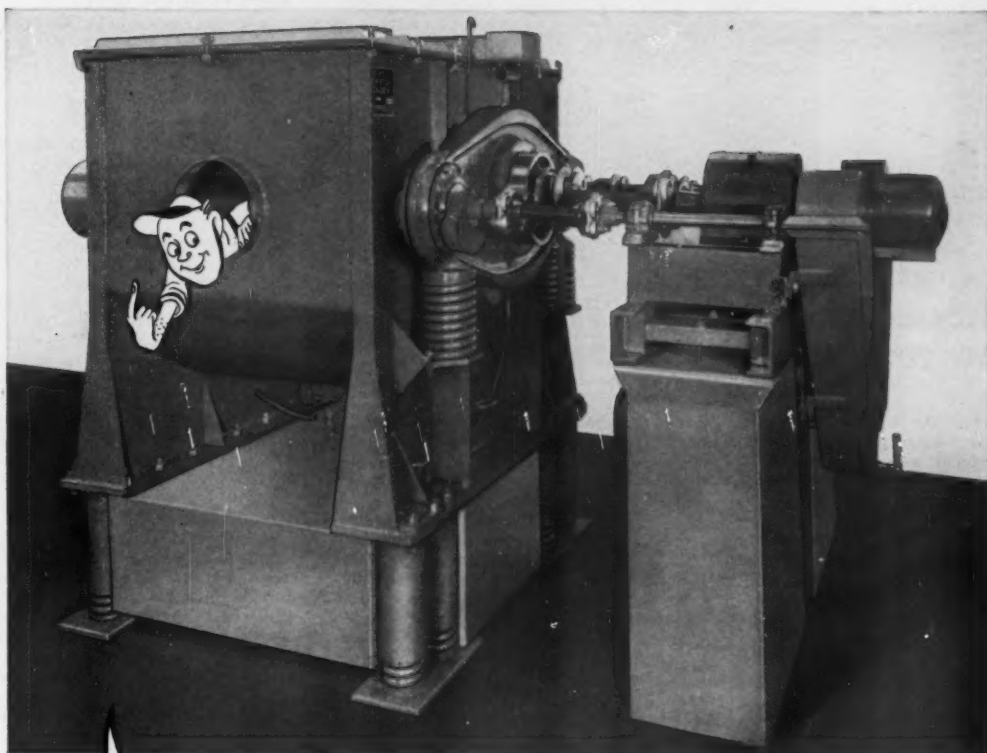


FIGURE 1—SKETCH OF LOG- AND BARK-HANDLING FACILITIES at Chesapeake Corporation of Virginia, West Point, Va.





**WANT TO  
GET IN ON  
A GOOD  
THING?**

**This BIRD VIBROTOR SCREEN is something on which to get inside information.**

It uses slotted, undercut screen plates in combination with intense, controlled vibration and rotary action to deliver:

**high capacity** — 50 to 90 tons of well screened stock per day

**at high consistency** — 1.3 to 1.6% or higher

**at low cost** — power per ton of stock is a small fraction of a horsepower.

*Why not find out what it can do on your stock?*

**BIRD MACHINE COMPANY**  
SOUTH WALPOLE • MASSACHUSETTS

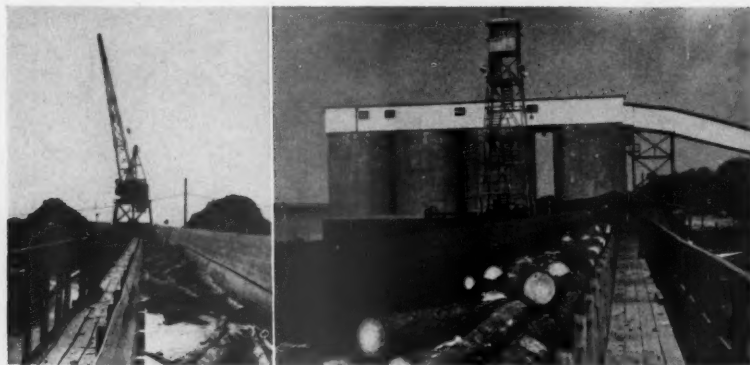


FIGURE 2—(LEFT)—RENOVATED "WAR SURPLUS" GANTRY CRANE at Chesapeake Corp. of Virginia.

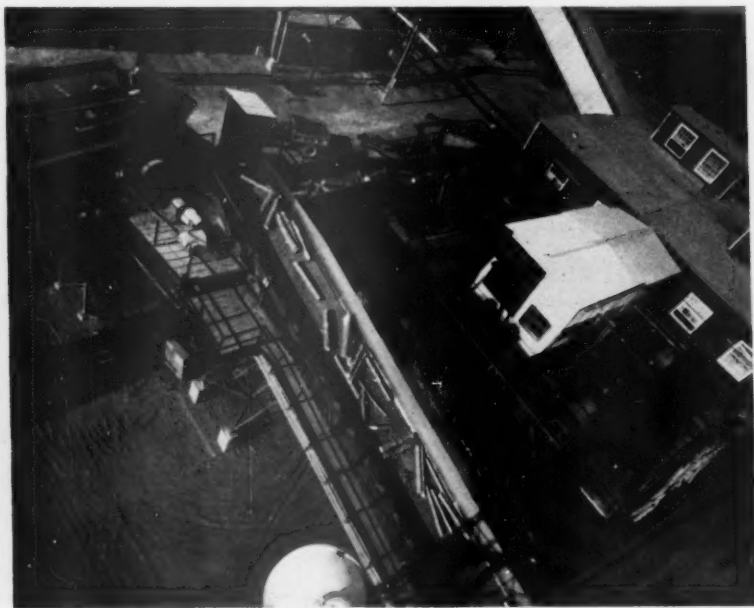
phase, 60 cycles. An air circuit breaker and indicating instruments are included on the low-voltage side of power center. On the 2400-volt side are two a-c magnetic full-voltage starters with Type BAL current limiting fuses for the forced draft and induced draft fans. Both motors are constant speed and non-reversing. The forced draft is changed by automatically changing vanes. This gives quicker response than change of fan speed. The output speed of induced draft fan is changed by magnetic clutch, which is electronically excited and set by manual adjustment of a rheostat.

To the left of the central control panel is a control center in which all auxiliary controls are located. Control is mounted on both front and back to conserve floor space. Electronic speed control for induced-draft fan magnetic clutch is next to control center. The control center contains four Mototrol electronic controls for bin feed, linestarters for the two hoggers

FIGURE 3—(RIGHT)—70-FOOT CONTROL TOWER, from which operator controls conveyors, chip storage bins are seen in the background.

with indicating ammeters, and linestarters for the chain grate stoker, spreader stoker, and conveyors. The conveyor controls are interlocked so that if one stops for any reason, all behind it will stop. Transformers are included for lighting and stator coil heating of hogger motors. To complete the electrical installation a power panel and 30 circuit lighting panel board are also in control center. The controls in control center are all combination type using type AB de-ion circuit breakers. Motors, other than the hoggers, have conventional resistance-type space heaters. A blue light on the control center indicates space heaters "on." This changes to red when the motor is operating.

Photo-electric level indicators on the operating panel indicate to the operator height of bark or other fuel in the bin. It is also planned to add similar photo-electric devices at all main discharge points and at the hoggers to give quick indication of "plug-up" of material.



## Equipment and Results With New C-E Unit

Regarding the results with this steam generating unit, R. H. Ellwanger, power superintendent at Chesapeake Corp. of Virginia, says:

"The savings in fuel cost in this installation represents a major portion of the financial return on invested capital. The reduction in direct operating labor resulting from the incorporation of the bark boiler into our main power plant building as well as the elimination of maintenance on refractory settings and water cooled grates has likewise effected an appreciable savings."

A brief description of the Combustion Engineering equipment and other conclusions by Mr. Ellwanger follows:

"The bark boiler furnace is completely water cooled with two short arches at the front and rear of the boiler with the ash discharge at the front of the unit. The furnace dimensions are 1'-0" deep by 13'-7 1/4" wide. The four 20" wide high set spreader distributor units are mounted 17'-0" above the traveling grate stoker and 17'-9" below the opening to the superheater section. The average furnace height is 44'-0" from the grate surface to the roof tubes. Below the spreader units are 28 tangential overfire air jets, 14 of which are located in each sidewall. The rear wall of the furnace contains 21 overfire air jets under the rear arch and 21 overfire air jets in the upper rear wall 13'-0" above the grate surface.

"The eight type "T" oil burners are located four in each sidewall, with one air jet located between each group of two burners. The horizontal center line of these jets is located 3'-6" above the center line of the spreader distributors to furnish overfire combustion air in this vicinity. The total furnace volume is 6,150 cubic feet with a total heating surface of boiler and furnace of 14,205 square feet. Design pressure is 600 p.s.i. but the unit is being operated at 430 p.s.i. at the superheater outlet.

"The superheater is a standard cross-flow pendant type and the boiler bank is strictly of crossflow design employing monolithic baffles. The tubular air heater contains a combined heating surface of 12,770 square feet. The dust collector is of the multi-tube type having 21 tubes of 7 x 3 deep.

"The induced draft fan is driven by a 300 h.p., 2300 volt induction motor with a magnetic coupling between driver and fan for variable speed control. The forced draft fan is a 125 h.p., 2300 volt induction motor directly connected to the fan employing vane control for admission of forced draft air.

"In designing for suspension burning we were convinced of the advantages of fine size preparation, as previously discussed, to obtain the most rapid moisture evaporation and combustion. Combined with the flash drying and suspension

FIGURE 4—LOOKING DOWN FROM THE TOWER, at Chesapeake Corp. of Va., the operator controls the flow of logs delivered by truck or from the storage piles (bottom conveyor), by ship (left-hand conveyor), or by rail (top conveyor). Barking drums are shown at the right with logs now on their way to the chippers.



## Time to Modernize Your Valve Set-up



Once you've installed electrified valves in your stock lines you're "blasting with atoms."

Shartle builds three types of valves for panel board operation—rotary—gates—slide.

The Shartle Hope type rotary features a top-suspended rotor that never sticks—cannot stick; valve shoulders free of pockets and areas in which stock might collect, dry and freeze the rotor. When you press a button or flip

a switch you get action.

These valves are built in all required mill sizes—4" to 22"—and with body and rotor of all cast-iron, or of required corrosion-resistant alloys.

Shartle also builds electrified gate and slide valves.

Also hand wheel, lever, and chain operated rotaries, hand wheel, pneumatic, lever or crane-operated gates and slides, etc.

Get specification data sheets on Shartle valves and you'll see why they are so dependable.

**SHARTLE BROS. MACHINE CO.**  
MIDDLETOWN, OHIO

DILTS MACHINE WORKS, Fulton, New York • Divisions of THE BLACK-CLAWSON CO., Hamilton, Ohio  
Northern Sales Office: 814 N. Superior St., Appleton, Wis. • Southern Sales Office: 937 Coventry Road, Decatur, Georgia  
Western Sales Office: Mayer Bldg., Portland, Oregon • Associate: THE ALEXANDER FLECK LIMITED, Ottawa, Ontario  
Subsidiary: B-C INTERNATIONAL LTD., Greener House, 66/68 Haymarket, London, S. W. 1, England



FIGURE 5—(LEFT)—MOTOTROL ELECTRONICALLY CONTROLLED D-C GEARMOTORS in Chesapeake Corp. mill (top left) drive feed screws to supply bark to the burner (right).



FIGURE 6—(RIGHT)—OPERATOR AT CHESAPEAKE CORP. MILL INSPECTS MOTOTROL ELECTRONIC CONTROL cubicle. To the right is the furnace control panel and a power center, consisting of a 500-KVA air-cooled power transformer and high-voltage switchgear.

burning principle, incorporated in this design, is extreme furnace turbulence.

"It is interesting to note that the unit is often operated at a capacity of 160,000 lbs. per hour for three to four hours. At this capacity, the furnace heat release is 38,000 B.T.U. per cubic foot per hour and a grate heat release rate of 1,260,000 B.T.U. per square foot per hour.

"In the design of any piece of equipment and its auxiliaries, the most important objective is that it shall be continuously available and able to produce. Now that the shake-down runs are over and the minor design changes completed, our service records indicate that an availability closely approaching 100% may be expected.

"One of the most attractive features of this entire installation is its operating flexibility in the handling of rapid load swings, at times encountered in the manufacturing process. Since approximately 85% of the combustion is done in suspension a simple increase or decrease of fuel supply will effect an immediate pick-up or drop-off of load from minimum to maximum steaming rate or vice-versa.

"Performance test results give an efficiency of 78.77% at 123,000 lbs. per hour steaming rate. It is interesting to note that after 6½ months of continuous operation, there is apparently no sand erosion or cutting evident on the boiler heating surfaces. The higher capacity levels from 90,000 to 160,000 lbs. per hour have been reached with ease and with operating performance in line with our expectations.

"Before a basis of comparison can be made, it must be stated that our old Dutch oven, 3-cell type furnace and boiler were not of sufficient capacity to burn all of the available refuse. On this basis, our records indicate a production of 2,195 lbs. of steam per ton of air dry pulp on the old unit while the new unit produces 3,010 lbs. of steam per ton of air dry pulp.

"Even with the increased cost of additional kilowatt input for auxiliaries; the maintenance cost of the hoppers; and the additional steam used by the fly-ash re-injection system, the bark boiler installation is yielding an attractive return on our investment.

"Additional attractive yearly savings could be effected by providing outside storage capacity and, thereby, permitting base loading of the unit to reduce the extreme high and low operating levels."

## Personals

### CANADIAN NOTES

GEORGE H. CARSON, assistant general manager and a director of Bowater's Newfoundland Pulp and Paper Mills, and formerly chief engineer, returned to Corner Brook recently from a trip to England by way of Montreal.

J. G. CHALMERS, administrative vice-president and manager of operations, Bathurst Power & Paper Co., Montreal, and J. McK. LIMERICK, technical director, are making a tour of pulp mills in Finland, Sweden and the United Kingdom.

R. L. WELDON, president of Bathurst Power & Paper Co., Montreal attended the annual meeting of the Engineering Institute of Canada at Vancouver in May and one of the principal speakers was C. H. KLOTZ, of New York, project engineer for Celanese Corp. of America on the Prince Rupert dissolving pulp mill project completed last year.

CLIFFORD CRISPIN, vice president, MacMillan & Bloedel, in charge of pulp division, has returned to Vancouver head office. C. W. E. LOCKE, newly appointed general manager of the pulp division, has established at Harmac and will report direct to Mr. Crispin from there. Mr. Locke, who until his latest appointment was manager of the company's Somass division, was for several years resident manager of Pacific Mills at Ocean Falls, B.C.

### OTHER NEW TYPE EQUIPMENT AT WEST POINT MILL

THESE BIRD MACHINE CO. VIBROTOR SCREEN installations at Chesapeake Corp. of Virginia Mill in West Point, Va., are delivering high capacity at high consistency at small fraction of hp. per ton of stock. It uses slotted undercut screen plats with intense, controlled vibration and rotary action.





#### THE CORRECT COMBINATION FOR SUCCESS

—In addition to good instrument performance the success of this installation is also due to the willing and complete cooperation of the Brunswick Pulp and Paper Company with the Bristol organization in the engineering, installation, and operation of the control equipment.



## "Outstandingly Successful Automatic Control"

### Bristol Digester Control Gives Complete Satisfaction at Brunswick Pulp and Paper Co.

As reported by Brunswick, the results obtained from automatic control system include (1) saving in steam, (2) pull-over of liquor minimized, (3) ideal cooking schedule accurately and consistently repeated, (4) practically no maintenance required, (5) results fully satisfactory.

Like all Bristol control systems, this one is simple, adaptable. Operating men get familiar with it fast. Control panel units can be installed side-by-side to form a continuous panel for controlling an entire digester house, and can be enlarged to cover more digester.

#### Bristol Instruments Get the OK in Mills from Coast to Coast

Experience at Brunswick Pulp and Paper Company is typical of the performance of Bristol Recording Instruments and Automatic Control Systems in Paper Mills from coast to coast.

Bristol manufactures a complete line of automatic controlling, recording, indicating and telemetering instruments and component equipment for the Pulp and Paper Industry to take care of applications requiring from only one or a few instruments to those requiring extensive instrument control panels.

**NEW SERIES 500 INSTRUMENTS ARE NOW AVAILABLE.** Products of over 60 years of instrument experience, they are extremely simple in construction and will withstand the severest service. They require practically no maintenance—anybody can take care of a Bristol Series 500 instrument.

#### Bristol Has the Resources Needed to Give You the Best in Instrument Engineering

Bristol has developed techniques and facilities for handling even the most difficult and unusual control problems.

Our engineers will relieve you of many worries by providing layout drawings and piping and wiring diagrams. We furnish panels in finished form with all internal piping and wiring complete. All you have to do is make main power and air-line connections. Our engineers stay with the job until operating satisfactorily.

Make use of Bristol resources. Write for Bulletins. **THE BRISTOL COMPANY,** 142 Bristol Road, Waterbury 20, Conn.

#### Quick Facts About Bristol Alkaline Digester Control System

Bristol Alkaline Digester Control System is used to automatically control digestion of Southern pine and North-western fir and hemlock in direct and indirect-steamed digesters, with either forced or natural circulation of both long and short cooks. *Installation requires no changes in digester equipment. It adapts itself to the digester, resulting in lower installation cost.* It is also adaptable to changes in operating conditions.



# BRISTOL

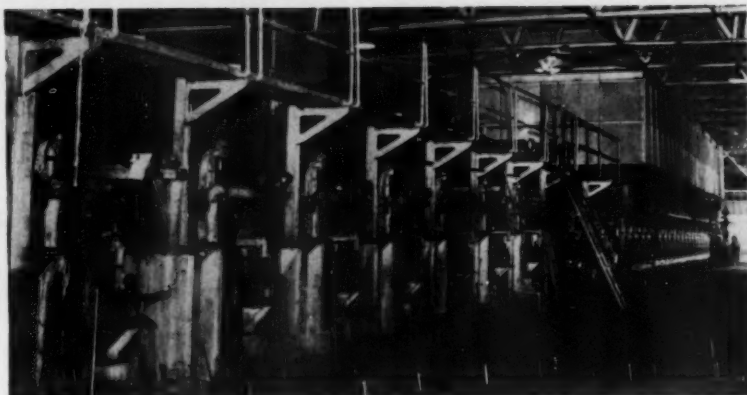
AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS



# TEXAS MILL ADDITION

## EQUIPMENT BOOSTS FLEMING OUTPUT

**GENERAL VIEW** of Fleming & Sons Mill's cylinder machine addition at Dallas, Texas, snapped by PULP & PAPER editor on tour of Lone Star State. There are seven MOORE & WHITE with CHENEY-BIGELOW Cylinders. Presses and driers are from BLACK-CLAWSON with FOXBORO drier control recorders.



Recently visited by a PULP & PAPER editor, Fleming & Sons, Inc., Dallas, Texas, has expanded its 125-ton per day production by adding a machine of 85-ton capacity, bringing total to 210 tons. This company produces corrugating material, test liner, all grades of pulp board, white patent coated, bleached vanilla line, vat line boards, paper for gypsum board, wall paper, egg cartons, and building paper. The mill uses waste paper and new purchased pulp.

When the 120-inch trim cylinder machine project was launched, Fleming did some hard shopping to get deliveries and came up with a machine composed of

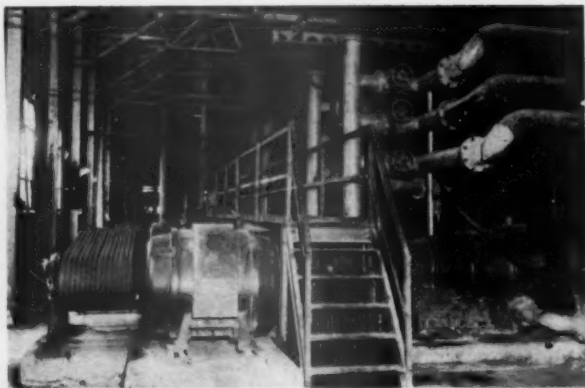
seven vats from Moore & White, wet-end cylinders from Cheney-Bigelow, presses and dryers from Black-Clawson, extraction roll from Downington, calenders from

Lobdell, and cutter from Moore & White. The No. 18 rewinder came from Cameron.

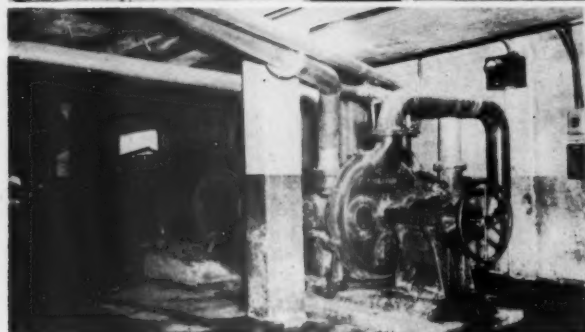
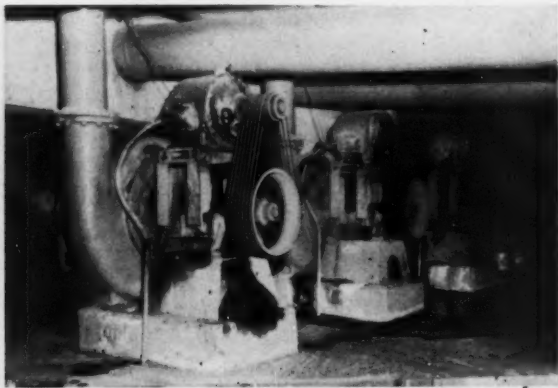
The machine has a 220-ft. line shaft driven by a 350 hp. Reliance Electric and

**EQUIPMENT FOR LATEST MACHINE ADDITION** at Fleming & Sons Mill, Dallas, Texas:

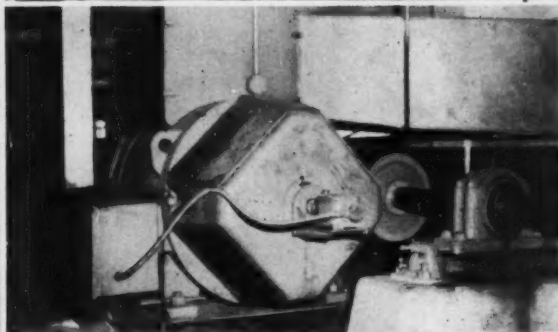
**TOP LEFT**—RELIANCE ELECTRIC & ENGINEERING CO. motors at left are drives for SHARTLE Miami No. 2 Jordans at right of steps. CRANE CO. valves are used.



**UPPER RIGHT**—SEVEN FURNISH PUMPS for Fleming & Sons' machine addition are shown in this view. They were made by MORRIS MACHINE WORKS and are driven by RELIANCE motors.



**LOWER LEFT**—RELIANCE-driven HERMANN CLAFLIN Refiner is shown here with Crane valves.



**LOWER RIGHT**—A 350-HP. RELIANCE Motor drives the 220 ft. long line shaft serving the cylinder machine which added 85 tons daily to Fleming paper production in Dallas.



## *the difference is Wet Strength!*

... it makes a big difference in paper sales, too!

Investigate these  
Cyanamid Resins  
for Dependable  
Wet Strength.  
All are Top Performers  
... One Will Exactly  
Meet Your Needs.

### For High Wet Strength in Quality Papers

#### **PAREZ® Resin 607—The One and Only Melamine Resin**

- ... maximum wet strength at lowest cost
- ... gives superior wet strength *right off the machine*
- ... assures uniform wet and dry strength
- ... the most resistant of all wet-strength resins to hydrolysis or breakdown under moist conditions
- ... a dry powder, it presents no storage problem
- ... high efficiency in all types of furnishes makes it the favorite resin for *all* wet strength needs.

### For Intermediate or Low Wet-Strength Papers

#### **PAREZ Resin 614, A Liquid, Cationic Urea Resin**

- ... high efficiency at low cost
- ... easy to use in your mill.

### For Unbleached Kraft Furnishes

#### **PAREZ Resin 610**

#### **A Liquid, Anionic Urea Resin**

OR

#### **PAREZ Resin 620**

#### **A Dry, Anionic Urea Resin**

Where Urea Resins are required, don't fail to investigate these quality products.

For Expert Technical Assistance... Cyanamid's Technical Service Staff men—all industry-trained in every phase of paper-making—are at your service. Call them in for help with any wet-strength problems. They can supply the skill, and Cyanamid can supply the resins, to solve them!

## *AMERICAN Cyanamid COMPANY*

INDUSTRIAL CHEMICALS DIVISION  
30 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.

Cyanamid Paper Chemicals: ALWAX® Sizes • WAXINE® Sizes • ACCOCEL® Dispersants • ACCOBRITE® Resin Size • PAREZ® Resins • Casein • Sulfonated Oils • Fillers • Defoamers • Soda Ash • Caustic Soda • Salt Cake • Acids • AEROSOL® Wetting Agents • CALMICRO® Calcium Carbonate • AZITE® 900 Liquefier • Aluminum Sulfate • Sodium Phospho Aluminate. \*Trade-mark

Sales Offices: Boston • Philadelphia • Pittsburgh • Baltimore • Charlotte • Cleveland • Cincinnati • Chicago • Detroit • Kalamazoo • St. Louis • Los Angeles • San Francisco • Seattle

AMERICAN CYANAMID COMPANY  
Industrial Chemicals Division P77  
30 Rockefeller Plaza, New York 20, N. Y.

Please send me the Technical Bulletins checked below:

- ☐ Technical Bulletin #9C on PAREZ Resin 607  
☐ Technical Bulletin #22A on PAREZ Resins 610, 614, and 620

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Engineering Co. motor. The 56 drier rolls are 42-inch diameter, plus an over-size roll. There are two presses. Drier steam control recording gauges are from Foxboro. Completed paper rolls are strapped with wire for shipping. The seven fan pumps serving vats are from Morris Machine Works and are driven by Reliance motors.

Equipment installed ahead of the machine includes: Four Shartle Miami-#2 Shartle jordans, each driven by 150 hp. Reliance induction motor with Crane gate valves; seven IMPCO flat screens; a Hermann Claflin refiner with Reliance motor and Crane valves; a half dozen Beloit Iron works stock pumps, moving pulp from the stock chest.

Company officers and supervisory personnel include: John G. Fleming, vice president and sales manager; Ervin T. Fleming, Jr., vice president and production manager; Joe B. Fleming, secretary-treasurer and traffic manager; Walter L. Fleming, vice president and ass't production manager; H. A. Kneare, general superintendent; A. A. Cramer, chief engineer; Luke Thrailkill, master mechanic; Mrs. A. J. Brown, office manager; C. S. Johnson, auditor; A. D. Edwards, ass't. chief engineer; Walter Alderger, construction engineer; Myron Kuhlman, technical director; Berle Babbler, ass't. technical director.

### Roy Ferguson Tours Pacific Coast Plants

Roy K. Ferguson, president and chairman of the board of St. Regis Paper Company, recently toured Pacific Coast plants and mills of St. Regis, and in Tacoma, Wash., conferred with Walter DeLong, a director and vice president of the company, and members of his organization. "A substantial program of improvements in our pulp mill here has been largely completed and we have just commenced production in our new multiwall bag plant here, which has been built adjacent to our kraft paper mill to provide the company with a completely integrated operation," Mr. Ferguson said in Tacoma. "This new bag plant, when in full operation is expected to employ some 500 workers. During the past year, the mill here completed facilities to permit a wider development of chip usage, which in our view represents a major step forward in fiber conservation to our broad program of timberland acquisitions on the Pacific Coast during the past decade.

"The new paper machine at the company's 'Kraft Center' at Pensacola, Fla., capable of producing approximately 100,000 tons of kraft paper and board a year, is now in regular production. The company's new pulp, kraft paper and board mill at Jacksonville, Fla., is expected to be in production in the fourth quarter of this year, and when completed will bring the annual kraft paper and board capacity of St. Regis up to 560,000 tons. At the end of last year, our company reached a point where it was able to supply from its own operations practically all of the sulfate requirements, both bleached and unbleached, of its kraft paper mills."



MR. AND MRS. JOHN FLEMING of the widely known Dallas, Texas papermaking family were snapped by PULP & PAPER at a recent convention. This Mr. Fleming is Vice President and Sales Manager of the firm.

### Swaim's NPA Report; Bland Elected V. P.

In exceptionally well-attended sessions, the National Paperboard Association meetings were held at The Homestead, Hot Springs, Virginia May 12 and 13, presided over by Marvin W. Swaim, of Alton Box Board Co., president of the association.

T. N. Bland, president, Fibreboard Products, Inc., San Francisco, was elected as an additional vice president of the association. There are now two vice presidents: Ralph A. Powers, of Robertson Paper Box Co., Montville, Conn., and Mr. Bland.

Figures submitted at the meeting indicated that orders for paperboard were now at approximately the same level as in December 1951 and that mill activity and production are now only 1.4% less than in the first half of 1950 and in the last half of 1951.

It is particularly interesting to note that containerboard consumption during the first 4 months of 1952 was actually 2.9% higher than in the last six months of 1951. The feeling seemed to pervade the meetings that the paperboard industry is operating at a reasonably satisfactory level when compared with other periods in recent history, excluding the 12 months, July 1950 through June 1951, when scare buying of paperboard, paperboard products, and almost all other articles mounted to unprecedented high levels.

President Swaim, in a report to the membership, said:

"It is the responsibility of each of us—of each individual company, large and small—to contribute something of substance to the continued welfare of this industry. . . . I submit that the only way we can discharge this responsibility is through a vigorous individual program of product research and development.

"And to those of you who are saying to yourselves at this moment that your company is too small to support a program of product research and development, I say to you there is no company too small to support such a program, if you will encourage every man working for you to contribute ideas.

"The program of growth, through new products and new uses, is not a new one for this industry."

### NY Pulpmen Elect Brown's J. J. McDonald



J. J. McDonald, head of Pulp Sales, Brown Co., is new Pres. of N.Y. Pulpmen's Group.

J. J. McDonald, head of the pulp sales division of Brown Co., was elected president of the New York Pulpmen's Golf Association at the 30th annual meeting of the group at Knollwood Country Club, near White Plains, N.Y., June 5. McDonald succeeds A. J. Feiler, of Perkins-Goodwin Co., in the post. Other officers elected at the time include Allan Patton, Mead Sales Corp., vice-president; and Robert L. Nash, Weyerhaeuser Timber Co., secretary-treasurer.

Sixty-five pulpmen took part in the annual event, and most of them participated in the golf tournament, which was a feature of the day. Important prize winners in the tournament included Edward B. Vaughn, Bulkley, Dunton Pulp Co., Inc., who turned in a sparkling 68 to win the low gross prize; Frank Donlan, of Perkins-Goodwin Co., who was the winner of the Anders Trophy; and Robert W. Long, of Pulp and Paper Trading Co., who was awarded the Pagel Trophy.

Five charter members of the association, who helped form the group for its first tournament in the Spring of 1921, were on hand for the 1952 meeting. These men were Alex J. Pagel, Pagel, Horton & Co., Inc.; William H. Anders, St. Regis Paper Co.; Carlton B. Overton, Castle & Overton; James Donaldson, Stora Kopparberg Corp.; and Harry W. Draudt, Price & Pierce, Ltd.

As secretary-treasurer, the arrangements for the next meeting of the association will be handled by Mr. Nash. Time and place will not be announced until next spring.

### New Great Lakes Record

The Great Lakes Paper Co., Ltd., Fort William, Ontario, Canada, broke its mill record for production on Monday, May 19, with an output during the one day of 537.8 tons of newsprint.

### "Keep New York Green"

Through distribution of "Keep Green" materials and films to schools, churches, clubs, associations, newspapers and radio stations, the New York State Junior Chamber of Commerce is cooperating with the State Conservation Department to cope with the grave fire hazard created by the blowdown of timber in Adirondack forests in November, 1950. The Junior C of C program got under way in early June with 6000 members and 47 local chapters participating in the educational work.



Corrosion, vibration and abrasion—the wrecking crew of piping systems—are stopped cold by ESCO engineered piping. Here's why:

#### **Stainless Steel for Corrosion Resistance**

ESCO pipe is centrifugally cast of corrosion resisting stainless steels. Pipes are joined with fittings cast of the same stainless analyses and designed for the individual layout. Pipe and fittings are flanged or welded together, heat treated to assure maximum effectiveness in resisting corrosion, and then pressure tested.

#### **Wall Thicknesses as Desired**

Wall section of ESCO Spuncast piping is controlled by the amount of molten metal introduced into

the centrifugal mold. Hence walls can be of any required thickness to withstand heavy pressure or vibration.

ESCO Spuncast Piping is cast in the standard stainless analyses, and in sizes ranging from 2" to 16". Fittings are available in flange and welding types of the same analysis.

Your nearest ESCO office will gladly give you detailed information about engineered piping systems; or fill in and mail the coupon for information about the manufacture and advantages of ESCO Spuncast stainless steel pipe and other equipment for the pulp mill.



Here's the secret: Uniform, homogenous grain structure of ESCO Spuncast pipe offers effective, long-time resistance to corrosion, vibration and pressure.

# ESCO

Stainless and  
High Alloy Steels

## ELECTRIC STEEL FOUNDRY

2166 N. W. 25TH AVENUE, PORTLAND 10, OREGON

Sales Offices and Warehouses

DANVILLE, ILLINOIS  
EUGENE, OREGON  
HONOLULU, T. H.  
HOUSTON, TEXAS

SEATTLE, WASHINGTON  
LOS ANGELES, CALIFORNIA  
NEW YORK CITY, NEW YORK  
SAN FRANCISCO, CALIFORNIA

SPOKANE, WASHINGTON

IN CANADA — ESCO LIMITED, VANCOUVER and TORONTO

## ESCO Spuncast FOR ULTIMATE ECONOMY

ELECTRIC STEEL FOUNDRY

2166 N. W. 25th Avenue, Portland 10, Oregon

Please send me information on ESCO Spuncast Pipe.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



# A SERIOUS SHORTAGE OF CHEMISTS AND ENGINEERS

## 16th EXECUTIVES CONFERENCE

Over 300 executives of the pulp and paper industries of the United States gathered in Appleton, Wis., May 15-16 for the 16th Annual Executives Conference of the Institute of Paper Chemistry. Elsewhere in this issue we publish excerpts from a panel symposium of Institute experts who figuratively took the paper-making fiber apart and told management men of its characteristics and potentialities.

Other features of the program were the annual report by Westbrook Steele, president of the Institute, special participation by third and fourth year students under Dean Harry F. Lewis, and a formal dinner address by Dr. Lee A. DuBridge, president of the California Institute of Technology, one-time student under Dr. Lewis and former teacher at Wisconsin University.

Said Dr. DuBridge: "The shortage of scientifically trained personnel in this country is close to a national calamity. Of our 160,000,000 people, only half a million are active scientists and engineers—only one fifth of these are in research—the search for new knowledge and new products."

He stated categorically that there are not enough scientists and engineers to do the job right now, that every industry, every government laboratory and every university is seeking more scientists and engineers.

Mathematicians and physicists and chemists whose training is so "abstruse" that industry would have spurned them a few years ago in favor of those with more practical experience with machines and techniques now are being offered fine jobs, he said. It is estimated there may now be 50,000 to 100,000 vacant positions in these fields and the vacancies are increasing at a much faster rate than new men are graduating.

Ernst Mahler, executive v. p. of Kimberly-Clark and board chairman of the Institute, introduced Dr. DuBridge as a "distinguished physicist."

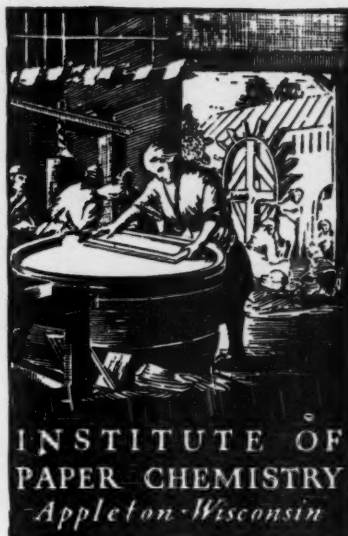
### Mr. Steele's Annual Report

In his annual report, Mr. Steele reviewed Institute growth since 1929, told of its new plans, and expressed appreciation for the active interest of trustees and the work of the Institute staff—"its life blood." He announced ten new members:

Central Paper Co.  
Gibraltar Corrugated Paper Co.  
Weston Paper and Manufacturing Co.  
Columbia River Paper Mills  
Fox Paper Co.  
Simpson Logging Co.

**TOP VIEW** is front entrance view of INSTITUTE OF PAPER CHEMISTRY. Below is a new air view. Also note new picture of Institute on our cover.

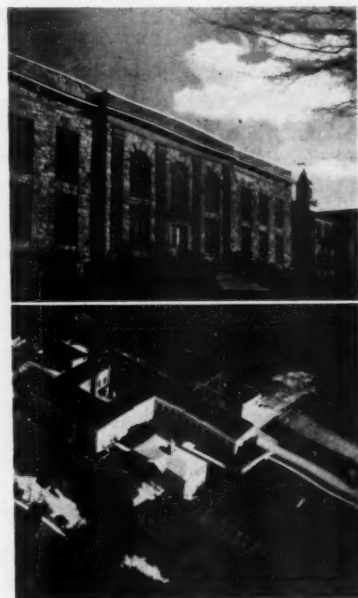
Low building shown at right in air view, and on cover, is Containers Section, which was new addition of recent years.



THIS IS THE OFFICIAL INSIGNIA of the Institute of Paper Chemistry, familiar on its letterheads and other official documents.

Schmidt and Ault Paper Co.  
Ball Brothers Co.  
Southern Paperboard Corp.  
Coosa River Newsprint Co.

Mr. Steele announced plans for a General Activities Building to be built probably this summer. The board at a session



two days previously, approved the new building, to be built of Lannon stone, of two stories, 114 ft. long by 54 ft. wide, west of the Library Building. It will house all administration, business and education offices, a 204-seating capacity auditorium, class rooms and a 65 by 20 ft. museum.

At the board meeting, which also discussed difficulties and efforts to get new qualified students, were: Nathan M. Pusey, Lawrence College president; Mr. Steele, president; D. V. Everest, Marathon Corp.; Herbert T. Randall, Champion Paper and Fibre Co.; John L. Riegel, Riegel Paper Corp.; George Olmsted, Jr., S. D. Warren Co.; Karl E. Stansbury, Thilmany Pulp and Paper Co.; Dan K. Brown, Neenah Paper Co.; George E. Dyke, Robert Gair Co.; A. B. Layton, Crown Zellerbach Corp.; Sydney Ferguson, Mead Corp.; Mr. Mahler; W. Irving Osborne, Jr., Cornell Paperboard Products; John G. Strange, Vice president and Treasurer of the Institute; and C. B. Siterson, Jr., secretary of the Institute.

### Gifts for The Institute

In his report Mr. Steele thanked donors for gifts. He said:

"A number of important gifts have been made to the Institute this past year. D. C. Everest, chairman of the board of Marathon Corp., trustee of the Institute since its inception, generously gave us the complete handmade paper equipment from the Lime Rock, Conn., mill which he owns. This is the last remaining complete handmade paper equipment on the Continent. The other two are the one which forms a part of the Crane Co. collection at Dalton, Mass., and the other at the Dard Hunter Paper Museum, Massachusetts Institute of Technology.

"A corporation, headed by one of our trustees, has for a number of years, made a contribution entirely apart from membership to strengthen our reserve for Institute research. This year again \$10,000 from this source was added to this reserve account. Asten-Hill Manufacturing Co. of Philadelphia, generously contributed \$20,000 toward our acquisition of a dormitory to house our students. This gift is in the memory of Mr. Asten and Mr. Hill, both now deceased.

"When Mr. J. A. Kimberly gave to the Institute the Kimberly Memorial Library Building plus an endowment fund to contribute to its maintenance in 1932, it was the largest gift we had ever received. Now, twenty years later, through our former trustee, Alexander Calder, chairman of the board of Union Bag & Paper Corp., in addition to their participation in the General Activities Center, contributed through their Charitable Trust the sum of \$100,000 to our plant development and maintenance fund. This is one of the





**SUCTION ROLLS** play an important part in today's high-speed, high-production

Beloit paper machines. On the Beloit assembly floor, Charlie Spalding (*center*) points out to Cash Whipple and Paul Pringle (*left*) and Don Simonds (*right*) the design features of this suction couch roll which will help a kraft mill in the South to obtain uniform, efficient removal of water.—*Beloit Iron Works, Beloit, Wisconsin.*

**BELOIT**

WHEN YOU BUY BELOIT... YOU BUY MORE THAN A MACHINE!

**PAPER MACHINERY**



**A SMALL PORTION OF THOSE ATTENDING LUNCHEON of Annual Executives Conference at Appleton, Wis. At head table, l. to r.: Vice Pres. JOHN STRANGE of the Institute; D. K. BROWN, Pres. of Neenah Paper; GEORGE OLMSTED, pres. of S. D. Warren; LARRY RIEGEL, Chairman of Riegel Corp.; A. B. LAYTON, Vice Pres. of Crown Zellerbach (Research); ERNST MAHLER, soon to retire, Exec. V. P. of Kimberly-Clark Corp.; SIDNEY FERGUSON, Pres. of APPA**

**and Chairman of Mead; WESTBROOKE STEELE, President of the Institute; CLARK EVEREST, Chairman of Marathon; HERBERT RANDALL, Vice Pres. of Champion (Research & Eng.); IRVING OSBORNE JR., Pres. of Cornell Paperboard; NATHAN PUSEY, Pres. of Lawrence College, of which the Institute is a part; and GEORGE DYKE, Pres. of Robt. Gair. Nearest to camera in foreground is ALLEN ABRAMS, Vice Pres. (Research) of Marathon.**

most magnificent single gifts that the Institute has ever received."

#### Changes at the Institute

"In late March, in Europe I made preliminary arrangements later confirmed by your board for an exchange lectureship between the Swedish Forest Products Laboratory at Stockholm, Sweden,



**HOWARD MORGAN (left), Manager, Pulp Div., Weyerhaeuser Timber Co., Tacoma, Wash., chats with JACK KIMBERLY, Vice Pres., Kimberly-Clark Corp., Neenah, Wis., between sessions at Institute of Paper Chemistry's Executive Conference.**

and the Institute by which one of their leading junior staff members will spend six months lecturing and conducting a research program assigned to him by us at the Institute and we may send either a staff member or a student for a period of six months or longer to conduct research with the facilities of the Swedish Forest Products Laboratory.

"One of our close mutual friends in the paper industry, in an article which he published in *PULP & PAPER* addressed to technical and scientific personnel, in early 1950 urged them, and I quote, 'To be able to present your ideas in words that management can understand.' This admonition your Institute recognized over 15 years ago when we began giving a course (not for credit) in the graphic presentation of scientific material. We are ex-

panding, in this coming year, our work in this field. Edwin W. Schoenberger, who for years has handled this phase of our activity on a part-time basis, is now to join our staff full-time. Dr. J. Edward Todd, long the assistant dean, becomes dean of admissions and secretary of the faculty. Mr. Schoenberger becomes dean of students. His relationship with staff and students both, from this position, therefore, will strengthen our work in the field of presentation.

#### Shortage of Engineers and Chemists

"In 1949 and 1950, in all branches of engineering, approximately 50,000 bachelors and first professional degrees were conferred," said Mr. Steele. "In 1951, the number had dropped to approximately 41,000. This year the registrations in fourth-year engineering are less than 31,000; registrations in the third year (which should graduate in 1953) approximately 27,500; while the class which should graduate in 1954 shows an approximate registration of only 26,700. The first indication of an upswing in engineering is in the class of 1955 which approximates 39,500. All of this is 25% below the experience of 1949 and 1950, and we cannot expect all of those now registered to carry through to final degrees.

"It is currently estimated by competent authorities that this year there are 80,000 engineering jobs to be filled exclusive of the military requirements. This demand must be met by less than 41,000 engineering bachelors.

"In June 1951, there were 3600 first chemical engineering degrees conferred. This year, the number will not exceed 2800. In 1953, the figure will certainly not exceed 22- to 2300, and the class of 1954 should provide about the same number. In 1949, 4,000 first degrees were conferred in this field. Chemistry majors, in some reports, cover not only chemists but pre-medical students and those in other pre-professional training. In 1949, there were 7400 earned first degrees in the field of chemistry. In June of 1951, only 7000 first degrees in chemistry. The rough estimate for 1952 is 5600. Bulking the fig-

ures for chemists and chemical engineers, the area in which we are mainly concerned, we find a drop of about 30% in available chemists and chemical engineers this year over last and a further shrinkage on the horizon for 1953 and 1954."

Referring to the remarks by Dr. DuBridge, Mr. Steele said: "His comment had to do with the salaries paid scientists in contrast with the salaries paid to executives, production men and salesmen. It was his announced belief that, if we advertise the fact that industry and education would pay 25-, 50-, 75,000 dollars a year to scientists we would draw into the reservoir manpower for scientific training which soon would fill the gap in



**DR. JOHANNES A. VAN DEN AKKER, leader in Physics at the Appleton Institute, greets DR. LEE A. DUBRIDGE, President of California Institute of Technology, who flew to Appleton and is shown landing from plane. He told over 300 executives of this industry the critical shortage of scientists and engineers in the U. S. "Is close to a national calamity."**

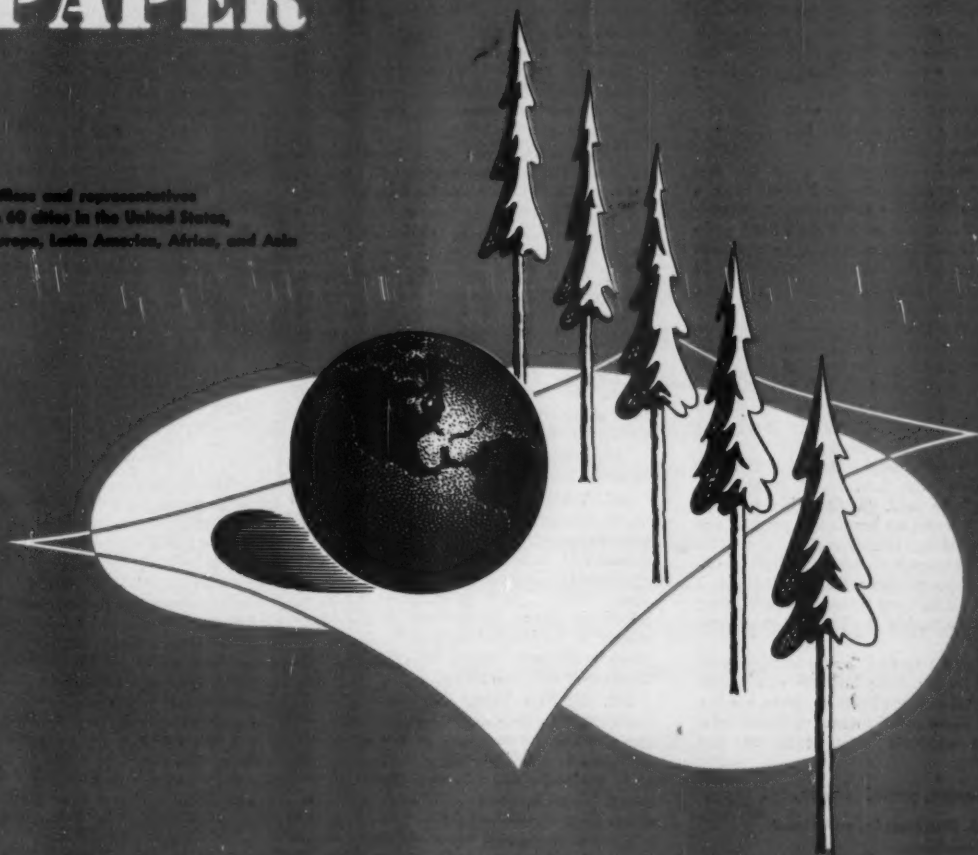
our need. Dr. DuBridge did not mean to imply that industry paid all salesmen, all executives, all production men on that scale. Obviously, they do not but the opportunity is there for the man of ability, energy and experience to achieve that goal."

#### Nucleonics Expert

In keeping with the policy of industrial Nucleonics Corp., Columbus O., to broaden the field of peace time applications of nuclear energy, the firm has appointed D. G. Calkins to take charge of its new radiochemistry department. It will direct the activities of the research staff in developing new applications of atomic power for industry. A native of Detroit, he was associated with the Atomic Energy Commission at Oak Ridge, Tenn. He moved to Columbus in 1948 and joined Battelle Memorial Institute where he was an assistant supervisor in charge of radiochemical research.

# WOOD PULP PAPER

Offices and representatives  
in 60 cities in the United States,  
Europe, Latin America, Africa, and Asia



BULKLEY, DUNTON & CO., INC. • BULKLEY, DUNTON PULP CO., INC. • BULKLEY, DUNTON PAPER CO., S. A.  
BULKLEY, DUNTON CELLULOSE EXPORTS, INC. • BULKLEY, DUNTON PAPER (FAR EAST) CO., INC.  
In New England—CARTER, RICE & CO. CORPORATION



**BULKLEY, DUNTON**  
ORGANIZATION  
295 MADISON AVENUE, NEW YORK 17, N. Y.

# PAPERMAKING FIBER

## APPLETON INSTITUTE PANEL 'DISECTS' IT

A highlight of the 16th Annual Executives Conference of the Institute of Paper Chemistry, which brought top flight management men from pulp and paper companies all over the U.S. to Appleton, Wis., in May was a panel on "The Papermaking Fiber."

Jam-packed into one discussion and one sitting, was an exciting and interesting review of most recent knowledge the industry has of the mysterious little "strangers" known as fibers—and there was a distinction between cellulose and papermaking fibers. The review gave these pulp and paper executives flickering glimpses into the great potential developments and the road of technical progress that lies ahead for this paper industry.

Fitting the 1952 No. 1 man of the American industry, Sydney Ferguson, chairman of The Mead Corp., was called upon call to order the Annual Executives Conference and to introduce the panel. He did so in his role as president of the American Paper & Pulp Association.

"In 1949 this panel discussion type of presentation was introduced into these meetings," he said. "I find this type of program interesting because it permits the accommodation, consideration and the placing in perspective of diversified viewpoints on the subjects being discussed. I for one shall be very interested in hearing the Institute tackle the important subject of fibers."

With that he turned the meeting over to the panel leader, John Strange, vice president and treasurer of the Institute. He introduced these panel members, listed here with the subjects they teach at the Institute:

**John Strange, panel leader.**

**Donald J. MacLaurin, pulp and papermaking.**

**Edgar E. Dickey, organic chemistry.**

**Dr. Willis M. Van Horn, biology.**

**Dr. Johannes A. Van Den Akker, physics.**

**Dr. Kyle Ward, cellulose chemistry.**

**Dr. Roy P. Whitney, chemical engineering.**

PULP & PAPER has taken the liberty of attempting to select excerpts from the discussion which followed, which seemed most significant and interesting for the production and management readers of this magazine. These selections follow:

**MR. STRANGE:** We purchase the papermaking fiber in tremendous quantities daily. We process it in a great variety of ways, and we sell it to many different consumers. In spite of all this we really know relatively little about it.

**DR. VAN HORN:** The papermaking fiber is the result of a life process. It is a

product of photosynthesis, which in the presence of chlorophyll and sunlight, makes sugars out of carbon dioxide and water. Fiber is going through the same gradual evolutionary changes as other forms of life. This evolutionary process of plants can be greatly accelerated or altered to suit the whims of the men who use them.

**MR. MACLAURIN:** A typical papermaking fiber is an elongated cell about as wide as an ordinary human hair and perhaps 100 times longer than it is wide. The fiber is not solid but is tubular in nature. It is a very complicated structure.

**DR. VAN DEN AKKER:** Our papermaking fiber may be dead but it is not so quiescent. If dry it imbibes water from the air and can absorb up to 25% or more of its weight, twisting and swelling very appreciably in its girth as it does so. When the atmosphere becomes dry, the fiber gives up a large part of its moisture, shrinking and twisting again.

**MR. DICKEY:** Isn't this fiber a rather unusual engineering material?

**DR. VAN DEN AKKER:** The fiber is much stronger than its fragile appearance would suggest. When the fiber is loaded or stressed it is not deflected in a definite predictable manner, but creeps or undergoes "cold flow," gradually changing length or shape as it does so. When a stress is suddenly removed, the fiber quickly changes toward its original condition, but only part way.

**DR. WARD:** From the standpoint of chemical structure and chemical behavior the most important part of the cellulose molecule is the hydroxyl group, of which each molecule may have several thousands. These hydroxyls are important because they significantly affect the way in which the papermaking fiber reacts with water and the way it bonds during the papermaking process.

**MR. DICKEY:** One sample of the chemist's work is well illustrated by differences between cellulose and xylan. The minor chemical differences between them are responsible for astounding differences in physical properties which are reflected in the rate of beating, strength of bonding, ease of sizing and dyeing and in other ways.

**DR. WHITNEY:** We must be concerned with useful applications of papermaking fibers and then we must consider not so much a single fiber as large masses of fibers and their behavior. In the case of dry fibers, the all important fact is that they must be built up of billions of small units and that we have to stick them all together somehow. I think this sticking together is of the very essence of papermaking.

**DR. VAN DER AKKER:** What we called the surface of the fiber is not only the superficial surface which we see in

the microscope. There is an internal as well as an external surface. These surfaces are the seat of some rather mysterious forces which bond or hold other surfaces and molecules having a similar affinity. These surface forces can only reach out for very, very short distances and they can attract and hold only the other surfaces and molecules which come close enough to be within their field of influence. These forces find dyes, adhesives and other materials. They are the forces, in short, which tie the fibers in a sheet together and make possible the far-flung paper industry.

**MR. MACLAURIN:** Fibers change remarkably as they are brushed and rubbed, cut, and pounded in beaters and jordaners. They swell, they unravel, they twist and flatten.

**MR. STRANGE:** These mass behaviors not only present many complicated problems but they also make the paper industry the versatile field that we all know it to be.

**DR. VAN HORN:** Is a cellulose molecule of the shorter length, that is, say 3000 repeating units, any different from the cellulose molecule in the longer range of, say, 5000 repetitive units?

**DR. WARD:** Several years ago it was popular to refer to alpha cellulose and beta cellulose and the principal difference between them was that the alpha cellulose had a higher chain length. We used to talk about gamma cellulose, too, but it differed in composition as well as chain length and was quite similar to what we call hemicellulose today. Most papermakers know that alpha cellulose was harder to hydrate and to work in papermaking equipment, but it did give a paper which was more resistant to aging and to attack by chemicals. The long chain cellulose molecule can be chopped into segments. In this electronic age we usually use ultrasonics or some other ultramodern method instead of old-fashioned scissors.

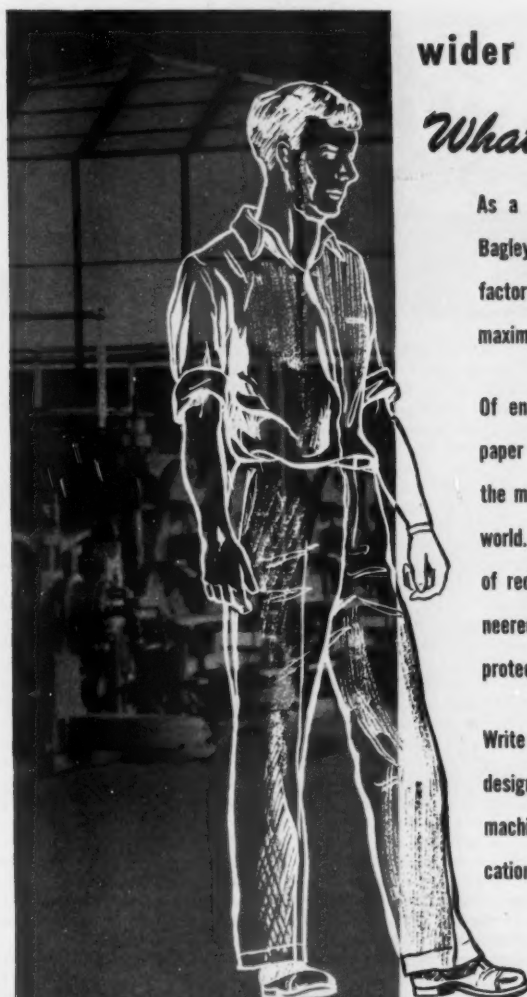
**DR. WHITNEY:** Is it possible to lengthen the chain?

**DR. WARD:** Not so far as we know. However, the paper industry is not even making the most of the cellulose chain lengths we have on hand.

**MR. DICKEY:** Two fibers may be quite different in their behavior because they differ in degree of crystallinity. One may be comprised of cellulose which is primarily in what we call the amorphous state. The other may be largely in the crystalline state. We can convert amorphous cellulose to crystalline cellulose by such factors as heat or acidity.

**DR. WARD:** Most of the cellulose molecules in the summerwood fiber of Douglas fir are practically parallel to the fiber axis. In fibers of loblolly pine, the cellulose molecules run at an angle of about 23 degrees to the fiber axis. We still don't know what effect these differences may have on





*designers and builders of  
papermaking machinery*

**Since 1853**

**WATERTOWN, NEW YORK**

*Foreign Representative*

**Castle and Overton, Inc.**  
630 Fifth Ave., New York 20, N.Y.

*Finland Representative*

**Aktiebolaget Ekströms Maskinaffär**  
Helsingfors, Finland

**wider machines — higher speeds**

## *What about* **SAFETY?**

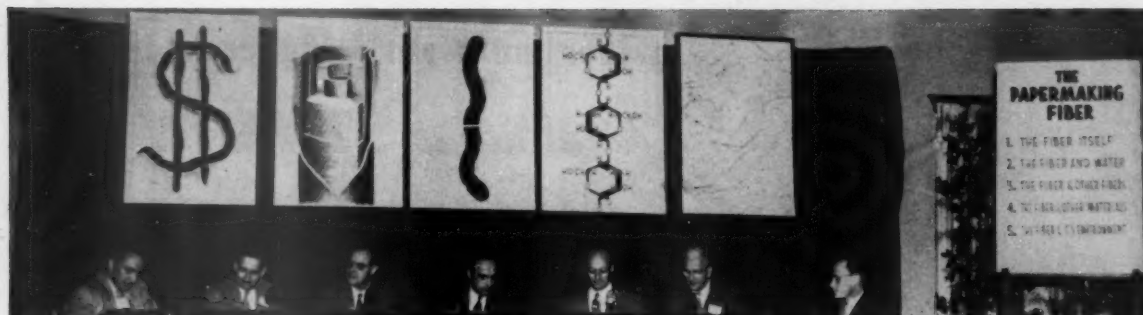
As a pace-setter in wide-high-speed paper machine design, Bagley & Sewall has always been aware of the ever present factor of safety to mill personnel — always incorporating maximum safeguards into the design of the machine.

Of entirely new design, the latest Bagley & Sewall produced paper machine is of great width and extreme high speed; also, the most completely automatic-controlled paper machine in the world. Automatic control is, of course, an advantageous means of reducing personnel hazards. In spite of this, we have engineered many features of safety into this machine for greater protection which contributes to higher mill employee morale.

Write for complete information on the latest Bagley & Sewall designs for paper machines — pulp and papermaking specialty machines. We would welcome the opportunity to show the application of the new designs to your mill requirements.



**BAGLEY  
AND  
SEWALL**



**PANEL OF EXPERTS** who discussed papermaking fibers and their potentialities for Executives Conference in Appleton. Left to right: DONALD J. MACLAURIN, pulping and papermaking, EDGAR E. DICKEY, organic chemistry, DR. WILLIS M. VAN HORN, biology, JOHN G. STRANGE, discussion leader, DR. J. A. VAN DEN AKKER, physics, DR. KYLE WARD, cellulose chemistry, and DR. ROY P. WHITNEY, chemical engineering.

papermaking properties.

**DR. VAN HORN:** There are generally considered to be four wrappings or layers in the fiber. The first is the so-called cambial or primary wall. The secondary wall of three layers grows in thickness as cellulose is formed and deposited in the fiber during the life process of the tree. Its third or inner layer represents the final film deposited in the growth of the fiber, which was originally filled with the life-giving protoplasm fluid of the tree. It is this secondary wall which give the fiber its physical characteristics of importance to the paper maker.

**MR. DICKEY:** We have found recently that the primary wall probably plays a role in the properties possessed by some pulps.

**DR. WHITNEY:** Fibers in water system definitely tend to cluster or group themselves and this clustering leads to flocculation or agglomeration. It is good in that it helps to form sheets and mats and it also helps us a lot when we are trying to recover fibers from white water. It is bad when we can't control it, because it leads to what the papermaker calls "wild" formation.

**MR. MACLAURIN:** But formation involves the rate of agglomeration in relation to the rate of water removal on the machine.

**DR. WHITNEY:** For ordinary chemical wood pulps the concentration had to be reduced to about one hundredths of one per cent in order to eliminate flocculation of fibers even with controlled turbulence. Some long-fibered stocks will flocculate at concentrations as low as one thousandth of one per cent.

**MR. MACLAURIN:** Very interesting work has been done in the industry and at the Institute in the past few years on use of certain gums and mucilages as deflocculating agents. Such things as guar, locust bean gum, and deacetylated Karaya gum, for example, when applied under proper conditions discourage the fibers from forming groups and thus permit the use of higher concentrations without unduly wild formation.

**DR. WHITNEY:** The best way to han-

dle flocculation on a paper machine is to break up the flocs through turbulence and then attempt to form a sheet before the flocs have had a chance to recombine. A mat of papermaking fibers is not the simplest material in the world from a filtration standpoint. Filtration theories for compressible sludges are still in their infancy and I think here is a fruitful field for research.

**MR. STRANGE:** Just as the fiber is a complicated structure, so is the behavior of groups of fibers in water an exceedingly complex system.

**DR. VAN DEN AKKER:** The question of fiber to fiber relationships is not simply a matter of having fibers in proximity, but rather of the forces which hold them very strongly together and which permit us to make fiber sheets of considerable strength. This gets back to the attractive forces among the fibers.

**MR. STRANGE:** Can they actually be measured in the physical sense?

**DR. VAN DEN AKKER:** Some of these forces that bind fibers together are electrical, but they are not all electrostatic. These powerful forces that we are talking about are on an atomic scale and extend out only a matter of several billionths of an inch. I am not so sure that these forces can be directly measured, but we are able to measure energies associated with them.

**DR. VAN HORN:** When a web of paper goes through the drier section of the paper machine it is not only losing water, but other things are going on which don't meet the eye and which involve tremendous forces and adjustments within the sheet.

**DR. WARD:** Hydroxyl groups have a great affinity for water and as a result of this affinity water can actually penetrate deep into the molecular structure of the fiber. This swells the fiber and makes it more flexible. The water plays a very important part in permitting the fiber bonding by the atomic and molecular forces we were talking about.

**MR. DICKEY:** Can we possibly imagine any liquid other than water which might be better for making paper?

**DR. WHITNEY:** Only two or three others. One is formamide, which probably costs around a dollar a gallon.

**MR. STRANGE:** I guess we had better stick to water.

**DR. VAN DEN AKKER:** A generation or so ago it was believed that a sheet of paper got its entire strength from mechanical interlocking. We know now that

in terms of over-all results the mechanical binding is not nearly as important as the other kinds of bonding.

**MR. MACLAURIN:** Fibers in water have a negative charge and will tend to repel other particles having a similar charge. They will grab onto other particles which carry an opposite or positive charge. One of the best examples of this sandwich mechanism is in rosin sizing.

**DR. WHITNEY:** There are some good practical examples. One is in the use of melamine formaldehyde resin. Another good example of a material attracted to the fiber in this way is a basic dye.

**DR. WARD:** Fiber is not a simple wall but it contains many holes or perforations. Melamine resin cannot only be precipitated on the outside of the fiber but may also penetrate the fiber.

**DR. WHITNEY:** The electrical charges on a fiber are of a very low magnitude and when an oppositely or positively charged material such as melamine resin comes in contact with the fiber it rather quickly neutralizes the original negative charge on the fiber and may actually go so far as to reverse the charge. In the case of melamine, the charging of fiber is probably neutralized somewhere around the one per cent level.

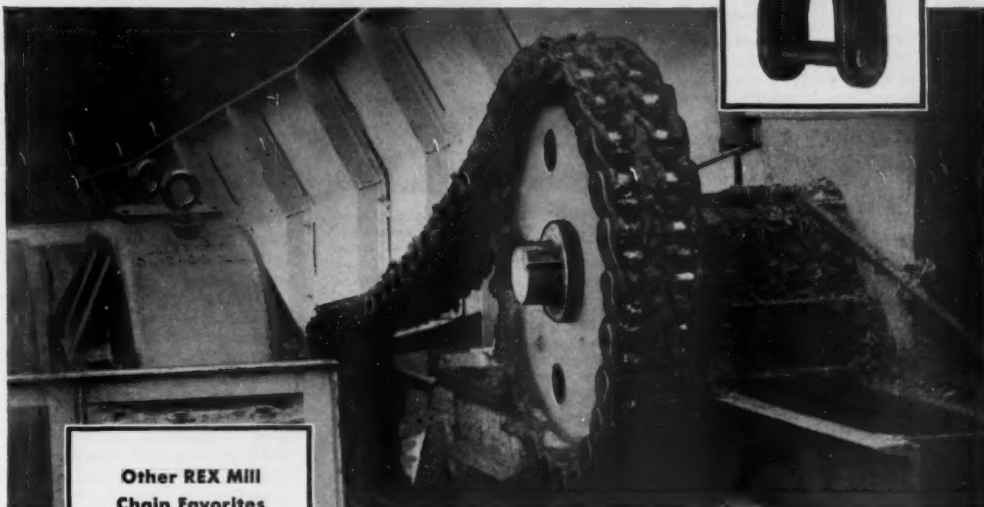
**DR. WHITNEY:** The chemical bonding factors which are inherent in the fiber probably are also acting. We do know that melamine can be added in rather significant percentages. Additional amounts of melamine are actually bound by some force, and, some people feel that this is caused by hydrogen bonding.

**MR. MACLAURIN:** It would help us a great deal if we had a better understanding of the bonding. Papers might be made with lower concentrations of these other materials because the bonding could be made more efficient. Materials which now do not bond to cellulose fibers, such as many of the fillers could be made to bond if we knew more about the nature of such bonding forces. This would be of major importance to book paper mills.

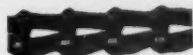
**DR. VAN DEN AKKER:** If a sheet could be made as described, the paper will be more porous and more receptive to oil base printing inks. Such a paper would probably have greater dimensional stability under varying moisture contents and would probably register with less trouble in the presses. Electrostatic attraction of two particles oppositely charged isn't strictly a bonding. Chemical bonding is much more than a matter of

(Continued on Page 86)

## GET MORE HORSEPOWER PER CHAIN DOLLAR



### Other REX Mill Chain Favorites



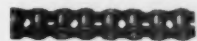
Rex H-Type Conveyor Chain



Rex Combination and  
Durebar Chain



Rex Refuse and Log Haul Chain



Baldwin-Rex Roller Chain

Rex Chabelco Steel Chain is ideal for mill drive service. Since most mill drives operate under heavy loads at low to moderate speeds, Rex Chabelco delivers more horsepower for each dollar of investment. Here's why:

First, for equivalent load, Rex Chabelco Chains and Sprockets are lower in original cost than other types of driving medium. Often a single strand Chabelco Chain will handle loads that require multiple strands in other types of drives.

Second, Rex Chabelco is lowest in overall operating cost and assures the longest overall drive life. It is a precision-built chain made of high carbon or alloy steel, heat treated for high strength and durability. Clearances are built in between chain parts, permitting exposed operation under severe conditions. Dust and dirt are far less likely to build up between chain parts and cause "freeze-ups." Heavy shock loads are easily accommodated. Maintenance is simpler . . . more economical.

Rex Chabelco Chains come in a wide variety of sizes and strengths. They are frequently used to replace cast chains of equivalent size where greater strength is necessary. They can often operate over the same sprockets as equivalent size cast chain.

Rex Chabelco Chain Drives are *easy* to select. For information, ask your local Rex Field Sales Engineer, or write to Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.



CHAINS AND SPROCKETS



# EXPERIENCES AND METHODS IN A SPECIALTY MILL

## PRACTICAL SLIME CONTROL

By Chester T. Beals

Tech. Assistant to Paper Mill Superintendent,  
Camas, Wash., Division, Crown Zellerbach Corp.

(The Camas Mill, subject of these control measures, makes 20 grades of sulfite, Kraft and groundwood pulps, and 20 grades of paper).

The term "slime control" means to most of us pouring in quantities of costly, highly poisonous chemicals designed to kill the living organisms. This, in reality, is the last resort in slime control. I want to mention three other general preventative measures; first, the control of climate for bacterial growth; second, proper equipment design; and third, periodic machine washups.

Groundwood mills have been effectively cleaned through raising the stock temperatures to around 140° F. by white water recirculation and heating with steam. Nature often helps us at the other end of the temperature scale. We have no slime problems at our sulfite screens at Camas during the five or six winter months when water temperatures drop to 35 to 45° F. In regards to oxygen control, we are told that de-aeration of stock by new type equipment will also reduce slime.

Food supply is a very important factor. Groundwood stock with its dissolved wood substances, is an ideal growing medium. Sulfite and kraft carry less food material. We can expect little trouble with bleached stocks unless we add starch or protein by way of coatings or beater additives. Any time that we decide to upgrade the quality of a sheet by using a more highly purified pulp in our machine furnish, we can expect an added dividend in the way of reduced slime. In one such instance at Camas recently, we substituted bleached for unbleached sulfite in a furnish containing about 45% groundwood. Slime growth has been lower by at least 25% in the new grade.

In the way of equipment design, we must allow only the minimum of surfaces for slime to collect. Piping should be as direct as possible. It should be properly sized to provide good stock velocities, and should be free of dead ends and by-passes. Surfaces of stainless steel, tile, or transitite will collect much less slime than raw concrete or wood. In streamlining the stock system of one of our machines a short time ago, we eliminated about 600 feet of old piping—mostly iron and wood. Formerly slime was a chronic offender, but has given little trouble since.

Machine washups are absolutely essential to any slime control program. In most cases, the regular occasions afforded by grade changes or replacement of clothing are frequent enough to keep accumulations in check. Under extreme conditions, no amount of slimicides added to the system will supplant regular cleanups. When time permits, high pressure washing can



**CHEY BEALS** (left), Tech. Assistant to Paper Mill Supt., Camas, Wash., Crown Zellerbach Corp., who gave paper on control of slime which is published on these pages this issue. It was presented at Pacific Coast Supts. meeting in Longview, Wash., May 23.

**RUSSELL A. GOODWILLIE** (right), Pacific Coast Sales Engineer for Beloit Iron Works, Portland, Ore., gave paper at same meeting on recent machine design developments.

be accompanied by boil-outs using any of several detergents on the market, or by circulation of a solution of bleach liquor. Also, toxicants having a high affinity for porous surfaces can be swabbed or sprayed to inhibit the growth of slime for many days to follow.

Unfortunately, in spite of the many preventative measures, there will always be spots requiring toxicants. A successful day-to-day slime control program must:

1. Keep slime accumulation below the point at which it will be troublesome.
2. Be versatile enough to cope with the sudden changes in slime conditions which often take place.
3. Be as economical as possible.
4. Not be harmful either to safety of personnel or quality of product.

There is a very wide choice of toxicants on the market today. At Camas we have used or are using nine different materials, which can be divided into four general classes; mercurials, chlorinated phenols, nontoxic organics, and elemental chlorine. Each seems to have its particular use, and each its limitations. We find mercurials and chlorinated phenols the most effective slimicides. We use them in the pulp mills and certain paper grades. However, we avoid their use in food processing sheets because of the residues left in the paper. While non-toxic organics are found to be relatively ineffective, they serve a useful purpose in food grades where slime conditions are usually mild. We are now mill testing a new non-toxic fungicide that shows promise of competing with mercurials. Chlorine gives us outstanding results on one machine running a groundwood-bleached sulfite furnish. The big limitation of chlorine is its tendency to redden unbleached stocks and to bleach

out dyestuffs.

In setting up a slime control program, for a particular machine, we will usually take the following steps:

1. Select the most likely slimicide; 2. Determine the level and length of dosage time; 3. Choose the method and point of addition; and 4. Provide means for evaluating results.

Provision should always be made for an alternate chemical should a slime develop that is resistant to the one initially used. Since most chemicals are too expensive to be used continuously, we find that slug dosages over about two hours once or twice each day are effective. Slimicides added at less than killing concentrations are wasted.

In choosing the point and method of addition, we usually add closest to the trouble spot. Solid materials are best put in at the beaters or mixers. Liquids may be added to low consistency stock at the fan pump—an advantage if the chemical has great affinity for the pulp fiber. A good combination for liquid mercurials seems to be a small amount at the beaters (just enough for control at stock chest consistency) followed by periodic slug dosages at the fan pump sufficient for control at headbox consistency. A chemical feeder pump is a necessity for fan pump treatment. Chlorine is added continuously at the wire pit, just enough to form a barely perceptible residual at the headbox. White water bacteria counts remain very low, and sheet color is not affected.

We evaluate our slime control program by the results at the machine; the thickness of accumulation, and frequency of slime holes and sheaf breaks. We find the slime panel—a wooden board immersed in a flow-box through which white water is circulated—to be indispensable. Daily slime scrapings tell us how fast is the growth, and enable us to foretell trouble. Also, we have a numerical record from which we can determine relative efficiencies and make cost comparisons. Only by continual vigilance, by applying past experiences, and by trying new slimicides, detergents and sprays can we hope to hold slime at a minimum and at a reasonable cost.

### Swigert Is Speaker At Longview Meeting

Ernest G. Swigert, president of Electric Steel Foundry Co., Portland, Ore., was featured speaker of Coast Superintendents dinner after their Spring Meeting in Longview, Wash. He discussed the political and moral trends in America and urged a more active role of individual citizens to preserve their rights and advance general welfare.





## Your Guarantee of Quality

Look for these seals on all Brown Company Solka and Cellate pulps. They are your guarantee of quality pulp, made from the finest wood cellulose.

Research leadership is one of the main reasons why Brown Company pulps are outstanding. Our laboratories are constantly developing new fibres with special characteristics to enable paper manufacturers to take advantage of the versatile characteristics of wood cellulose. They were the first to make it economical and practical to use hardwood fibres in the manufacture of many products.

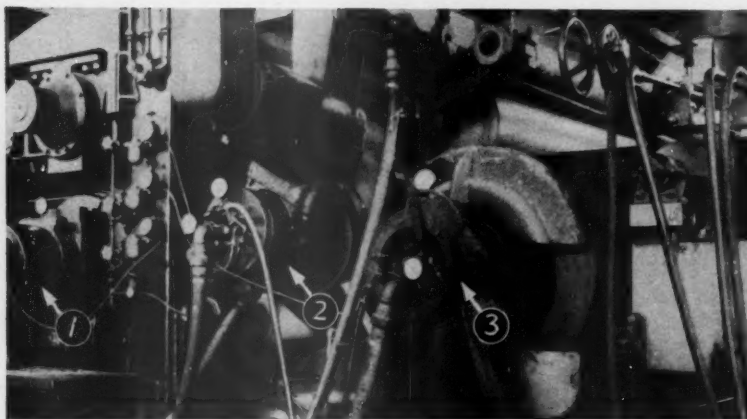
Brown Company pulps are made principally from its own vast timberlands of northern softwood and hardwood. This assures quality control and a dependable source of raw material.

If you have a paper problem, however difficult it may be, write to our Technical Service Division. Address Dept. CP-7 in our Boston office.

**BROWN**  **COMPANY, Berlin, New Hampshire**  
**CORPORATION, La Tuque, Quebec**

*General Sales Offices: 150 Causeway St., Boston 14, Mass.—Dominion Square Bldg., Montreal, Quebec*

SOLKA & CELLATE PULPS • SOLKA-FLOC • NIBROC PAPERS • NIBROC TOWELS • NIBROC KOWTOWLS  
ONCO INSOLES • CHEMICALS • BERMICO SEWER PIPE, CONDUIT & CORES



## IMPROVED MACHINE DESIGN

The new and much discussed suction pick-up and transfer press and the novel introduction of the differential drive for an entire paper machine are two outstanding new features of paper machine drive, Russell A. Goodwillie, Beloit Iron Works sales engineer on the Pacific Coast, told the Coast Superintendents in Longview May 23.

"A new newsprint machine now being built will have this type of press section, and it is anticipated that this machine will set a new world record for running newsprint," said Mr. Goodwillie. This machine will have the new differential drive for 2,500 F.P.M., air loaded head box, and other recent developments are being included in its design."

Exclusive PULP & PAPER articles have brought the industry first descriptions and illustrations of both these new revolutionary developments in recent issues. The suction pick-up and Cloverleaf press are described in the story on Hudson's new machine at Palatka, Fla., Apr. 1952 issue and the differential drive on the new Lee Paper Co. machine at Vicksburg, Mich., in the Feb. 1952 issue.

The first suction pick-ups have been installed on a newsprint machine at Port Angeles, Wash., and on kraft machines at Crossett, Ark., Franklin, Va., Roanoke Rapids, N.C., as well as Palatka. At Crossett a world's record speed of 1,925 FPM for machines other than tissue has been attained (see Nov. 1951 PULP & PAPER, page 64. Two new newsprint machines for Bowater's in Tennessee will have the pick-up.)

"The greatest change in machine design in recent years has probably been in the press section," Mr. Goodwillie told his audience.

The first differential drives for entire paper machines are at Vicksburg and Moss Point, Miss. This consists of a long series of gear units with Link-Belt variable speed drives, connected by a line shaft only a little over a foot above the floor, and eliminating lower floor or overhead line shafts with pulleys, belts, etc.

"The press changes have been made to

increase the machine efficiency, such as handling the sheet through the press section, as well as transferring the sheet from the Fourdrinier wire into the press section," he said. "The development has also been made to obtain a greater water removal in this section of the machine. The press development has come about by a progressive series of changes, and each change has been made to deal with the particular type of paper run on the machine."

In order to bring out the various points clearly, he showed a sketch of the air diaphragm guide and schematic air piping for operating the guide roll; and its operation was discussed for guiding the Fourdrinier wire, press felt, or dryer felt.

A sketch of the air-loaded packing used in suction rolls was compared with that of the spring loaded packing for suction rolls, and the advantage of the air loaded packing shown.

In his talk on the various arrangements of the press section, the first sketch showed the conventional reverse second suction press, with its limitations, and was compared with a sketch of the new arrangement of the suction transfer reverse press, which automatically transfers the sheet from the first press felt to the second press felt, eliminating the hand transfer, and providing a self-dumping doctor on the top press roll.

A third sketch in the press developments showed the new design of inverted second suction press in connection with a conventional arrangement of a suction first press. The suction roll in the inverted second suction press is used in the top roll position, and the operation of this press was discussed with respect to the press efficiency, and the new principle used in this press arrangement.

A final sketch used showed the arrangement of the suction pick-up and transfer press to use on a newsprint machine. The arrangement of the pick-up roll for transferring the sheet to the first press felt was wire and also the transfer press for transferring the sheet from the Fourdrinier discussed in connection with the new arrangement of the suction first and second suction press.

REPRINTED FROM OUR APRIL, 1952 ISSUE is this picture of Beloit Suction Pick-Up which was discussed by Russell Goodwillie at the Pacific Coast Supts. meeting in Longview. This is arrangement at a Florida mill and credited with boosting speeds in several mills. Left to right as shown by arrows: 1. Beloit suction transfer press. 2. Beloit suction pickup roll. 3. Beloit suction catch roll. Open draws are eliminated by suction transfer of sheet from wire onto pickup felt which carries it through the compact Cloverleaf press.

JOE E. MUCKLEY, former Seattle banker, has become Vice President and Treas. of Simpson Logging Co., which has Fiberboard Div. in Shelton, Wash., and Everett (Wash.) Pulp & Paper Div., besides extensive lumber and plywood operations.



### Joe Muckley Becomes Simpson Industries V.P.

Joe E. Muckley, former Seattle banker and investment man, has become vice president and treasurer of the farflung Simpson Logging Co. operations, which extend from the Olympic Peninsula to California on the Pacific Coast, and includes a Fiberboard Division in Shelton, Wash., and the recently acquired Everett Pulp & Paper Co. Division in Everett, Wash. He will be in charge of financial and accounting work in all areas from Washington to California.

Mr. Muckley has offices in the White-Henry-Stuart Bldg., Seattle, headquarters of the company, where William G. Reed, chairman; Thomas F. Gleed, president; C. H. Bacon, Jr., vice president of manufacturing, and other top officials are located.

Mr. Muckley is 42 years old, a native of Pennsylvania and graduated with honors from Yale University in 1930. He was with an investment firm in Seattle before serving more than three years in the air force in the Pacific, 1942-45, retiring as colonel. He was vice president of the First National Bank of Seattle in recent years, where Mr. Gleed had been president.

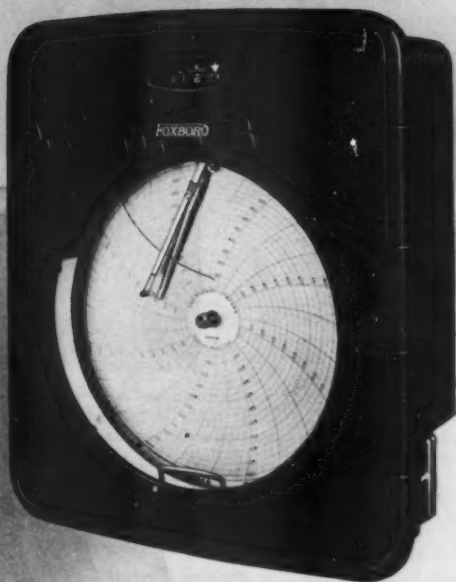
Simpson Logging has been prominent in forest industries of the Far West for over 50 years, with extensive sawmilling, plywood and logging holdings. Several years ago it began a further intensive integration of its forest resources by starting up the Fiberboard Division, which uses wood left-overs in making coated and other insulating boards with a pulping and Fourdrinier process, with capacity of 110 tons of pulp a month and 7½ million sq. ft. of board.

The Everett mill makes book, writing, mimeo and school papers with three Fourdriniers, capacity 80 tons, with soda pulp and de-inked pulp which its also makes. An improvement program is under way at this mill. A. B. Moody is vice president in charge.

NORTHWEST SUPERINTENDENTS

better measurement and control of

# HUMIDITY



Ever since the origination of accurate humidity control by Foxboro, this Company has been foremost in the development of instrumentation for absolute humidity, relative humidity, moisture content and dew point . . . whether in gas, air, bulk materials or moving sheet stock. The high quality standards and complete diversity of Foxboro Instruments . . . backed by Foxboro's broad experience . . . offer you unmatched facilities for obtaining the most efficient system for your operation.

#### INDICATORS • RECORDERS • CONTROLLERS

hygroscopic, wet-and-dry bulb, capacitance, plus the unique "Dewcal" system for continuous recording and control of either absolute humidity or dew point.

#### TRANSMISSION SYSTEMS • CONTROLLED VALVES

## FOXBORO

Reg. U. S. Pat. Off.

For over 40 years, specialists in the measurement and control of temperature, pressure, flow, liquid level, humidity . . .

THE FOXBORO COMPANY, FOXBORO, MASSACHUSETTS, U. S. A.

# NORTHWESTERN SUPERINTENDENTS

In Beloit, Wis., and Rockford, Ill., the Northwestern Superintendents held events of their 1952 Spring Convention on May 9-10. A highlight of the meeting was a tour of Beloit Iron Works, founded in 1858, guests being conducted on tours of the foundry, welding shop, machine shops and erecting floors of the paper-making machinery manufacturers on Rock River. Plant area will comprise 16 acres when current expansion is completed and a total of 570,000 sq. ft. of plant floor area.

Another event in Beloit the same day was an address by Dean Ivan Stone of Beloit College, telling of his experiences in the state department and in international affairs. Chartered buses brought superintendents and wives and guests from Rockford for a day of entertainment and instruction in Beloit.

At Rockford the big events, besides the final banquet were two panels on "Wood Room and Pulp Mill" and on "Paper Machines and Finishing." The panel that led discussion on "Wood Room and Pulp Mill" consisted of Walter A. Sherman, Kansas City Star Co., moderator; John A. McPherson, Mosinee Paper Mills Co.; Lawrence A. Pflieger, Marathon Corp., and Robert J. Gilmer, National Container Corp. The panel on "Paper Machines and Finishing" consisted of Leonard Parkinson, Rhinelander Paper Co., moderator, Robert M. Gavin, The B. F. Nelson Mfg. Co.; Robert E. Kissel, Hoberg Paper Mills; and Lloyd Hornbostel, Beloit Iron Works.

At Beloit, the cornerstone was moved from the gate house to the almost completed large new dryer shop for a brief cornerstone ceremony. Harry Moore, president of Beloit Iron Works handed the first trowel of mortar to Paul H. West,



chairman of the Northwestern Division, to place in the opening provided for the stone. Before the stone was moved into position, Fred C. Boyce, first active president of the Superintendents, joined E. H. Neese, chairman of Beloit Iron Works in placing the lid on the cornerstone.

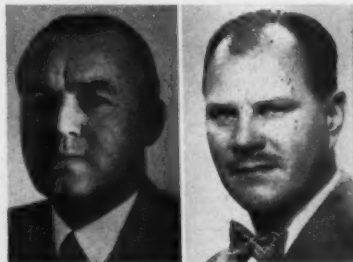
PAUL H. WEST (left), Thilmany Pulp & Paper Co., Kaukauna, Wis., Chairman of the Northwestern Superintendents Division, is receiving first trowel of mortar for new Beloit Iron Works dryer shop from HARRY MOORE, who was recently elected president of Beloit. The ceremony was an event during the Superintendents Spring Meeting held in nearby Rockford, Ill.

## IN NEW ENGLAND NEWS

### Holden Elected President of Eastern

Harold Holden, formerly vice president in charge of sales of Oxford Paper Co., is the new president of Eastern Corp., Bangor, Me. Mr. Holden's election as president and director was effective May 29, and he succeeds Clyde B. Morgan, who resigned to become the president of Rayonier Inc. last July. Ira D. Wallach has served as executive vice president for Eastern during the interim.

Mr. Holden's association with the industry dates back to 1919 with Falulah Paper Co. In 1921 he was part owner and New England manager of Paper Makers Chemical Co., which later merged with Hercules Powder Co., and he joined Oxford in 1936. He was made Oxford vice president in charge of sales in 1948. He is now a resident of Mt. Vernon, N.Y.



HAROLD HOLDEN (left), former Vice Pres. of Oxford Paper, is the new President of Eastern Corp., Bangor, Maine. He has been in the industry since 1919, with Falulah Paper, Hercules Powder and joined Oxford in 1936. He succeeds Clyde Morgan who resigned to become Rayonier President. ELMER E. BURLING (right), newly elected Executive Vice President of Improved Paper Machinery Corp., Nashua, N. H. Native of Massachusetts and MIT graduate, he joined IMPCO in 1935 and has been a V. P. since 1946.

### Seavoy in Europe

G. E. Seavoy, vice president of sales, Whiting Corp., Harvey, Ill., flew to Frankfurt, Germany to attend ACHEMA, the German equivalent of our chemical exposition which opened May 18th. Afterward he visited Whiting representatives in England, France, Belgium, Sweden and Switzerland.

### Maloney Leaves D. C.

John W. Maloney, vice president-sales manager of Hoberg Paper Mills, Inc., Green Bay, Wis., has resumed his former duties after one year's service with NPA. He served March-June, 1951, as chief of the Sanitary Paper Division, then as Director of the Pulp, Paper and Board Division.

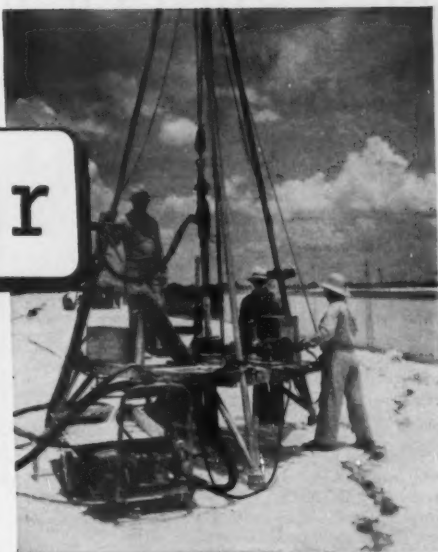


A GOOD DAY GREETED good turnout for 30th yearly outing of New York Pulpmen's Golf Association. Among those present: Top view: William Anders makes presentation of the Anders Trophy to Frank Donlan, of Perkins-Goodwin Co., with host, J. J. McDonald of Brown, new President, in the background. Below: Kevo Larsen, Weyerhaeuser Timber Co., tells a joke that gets over with Ed Vaughn, of Bulkley, Dunton, while Alex Pagel (left) doubtfully looks on.



# Sulphur

*Thousands of tons  
mined daily,  
but where does it all go?*



*Drilling a vat of Sulphur  
preparatory to blasting down*



All through the open seasons—spring, summer and fall—homes everywhere are being painted, old houses as well as new getting much needed protection from the elements. It's an activity seen by millions but few realize how important Sulphur is to this phase of our domestic economy. Actually, it's an essential commodity.

That's right. Paint pigments constitute one of the largest individual consumers of Sulphur . . . in the form of sulphuric acid. Government statistics show that for the year 1950 some 1,260,000 tons of 100%  $H_2SO_4$  were consumed by producers of lead, zinc and titanium pigments. Translated into Sulphur, this means around 400,000 long tons which is a lot of Sulphur! In fact, the pigment industry stands 5th on the list of the many industries that consume Sulphur in one form or another during their manufacturing processes.

The Sulphur Industry indeed has many mouths to feed, all important to our economy and standard of living.

**Texas Gulf Sulphur Co.**

75 East 45th Street, New York 17, N. Y.



Mines: Newgulf and Moss Bluff, Texas

# INTERNATIONAL PAPER CO.

## IT MADE 3,900,000 TONS FOR MARKETS IN 1951

International Paper Co., in a class by itself for size, by far the largest pulp and paper company in the world, set a new all-time high record for itself in 1951 by producing 3,894,675 tons of paper, board and pulp for sale. This was an increase of 369,790 tons over the previous high in 1950.

Sales of I.P. and its subsidiaries totaled \$637,385,653, up from \$498,415,714 in 1950. Total payroll was \$133,742,987, up from \$105,555,939. But net profit was down from \$66,647,151 to \$56,819,172. Taxes based on income per share of common stock (8,900,000 shares) was up to \$12.81 from \$7.03.

During the year total paper, board and pulp capacity of International mills in the U.S. was increased by 282,000 tons.

Canadian International Paper, with its subsidiary New Brunswick International, enlarged its newsprint capacity by 35,000 tons to the greatest capacity in its history.

Installation of a new 300 ton a day Beloit paper machine at Moss Point, Miss., and a program of improvements to existing equipment at a number of other mills increased annual productive capacity of the companies' paper, board and pulp mills by 282,000 tons over the December 31, 1950 capacity, reaching a new total of 3,933,000 tons a year on December 31, 1951. At Moss Point mill, other changes included complete rebuilding of its power plant and chemical recovery system.

Machine changes and additions to bleach plants were completed at the Louisiana and Mobile mills, permitting production of either bleached or unbleached kraft papers on one machine at each mill.

The annual capacity of the newsprint mills of Canadian International Paper and New Brunswick International Paper was increased by 35,000 tons during the year.

Another interesting development by Canadian International was conversion of approximately 75 tons per day of the capacity of its Kipawa mill from viscose dissolving pulp to pulp for the manufacture of cellulose acetate. This diversification will be helpful in meeting the needs of its customers.

The Hawkesbury, Ont., dissolving pulp mill is now being converted to use of hardwoods and capacity is being increased.

Additions to converting facilities during 1951 included doubling the capacity of the Wooster, O., shipping container plant, and completion of two new milk container plants, one at Atlanta, Ga., and one at Kansas City, Kan.

A second unit at the Natchez, Miss., hardwoods dissolving pulp mill, is to be completed by the end of 1952, bringing daily capacity to 660 tons of dissolving pulp.

John H. Hinman is president and Harrison R. Weaver is first vice president of the company. Vice presidents are Richard C. Doane, Maj. J. H. Friend, W. N. Hurlbut, S. E. Kay, Erling Riis and F. H.

JOHN H. HINMAN, I.P. President — "Our record means that we have a fine organization."



Savage. William A. Hanway is secretary and Carl S. Volk is treasurer.

Gross value of its pulp and paper mills in the U.S. is listed as \$217,978,440, in Canada as \$117,403,456, and total plants and properties as \$381,516,972. The company owns 3,655,001 woodland acres in the U.S., 436,444 in Canada, and holds licenses in Canada for an additional 13,241,578 acres, and U.S. leases for 333,570.

### Lundberg Reports On Swedish Tour

H. A. Lundberg, veteran consulting chemical engineer to Pacific Coast pulp industries, who went to Sweden with his wife and daughter late in March, returned to Seattle late in May. While in Sweden he visited a number of mills including Kramfors A.B., Sorakers Sulfitfabrik, Svartvik, Morrsundet Kopparfors and Fengerdors Bruks AB, where he observed the 35-ton Kamy continuous kraft cooking process which has been brought to successful commercial production. At the Mo-Damsjo AB bleached sulfite mill, Ornskoldsvik Mr. Lundberg saw the first pilot plant operation of continuous cooking of sulfite pulp. At the same company's mill at Husum he observed the CLOs bleaching process which preceded a similar process at Harnac on Vancouver Island, MacMillan & Bloedel Ltd., bleached kraft mill there.

On his return to New York Mr. Lundberg visited with a number of his principals, General American Transportation Inc.; Nichols Engineering, American Defibrator Inc., Sandy Hill and in Watertown, N.Y.

## INTERNATIONAL PAPER COMPANY AND SUBSIDIARY COMPANIES PRODUCTS AND PRODUCTION

	1941 tons	1951 tons	1950 tons
<b>UNITED STATES</b>			
Kraft container board (unbleached)	835,487	1,476,713	1,393,431
Kraft wrapping, bag and specialty papers (unbleached)	303,501	374,138	379,930
Bleached kraft paper and board	129,439	382,946	307,334
Dissolving and other kraft pulp for sale	98,769	155,862	72,048
Total kraft board, paper and pulp	1,367,196	2,389,659	2,152,743
Groundwood specialty papers	198,449	221,684	185,072
Book and bond papers	171,234	157,343	141,733
Other pulp and paper grades	103,283	58,396	26,763
Total United States	1,840,162	2,827,082	2,506,311
<b>CANADA</b>			
Newsprint	518,232	801,256	774,484
Dissolving and other sulphite pulps	230,818	261,239	238,620
Other pulp and paper grades	64,588	5,098	5,470
Total Canada	813,638	1,067,593	1,018,574
<b>TOTAL TONNAGE</b>	<b>2,653,800</b>	<b>3,894,675</b>	<b>3,524,885</b>

Pulp figures include shipments to mills of the companies for their own use as follows: 66,394 tons in 1941; 44,993 tons in 1951 and 37,384 tons in 1950.

	1941	1951	1950
Shipping containers	147,153	268,765	251,042
Grocery, multi-wall and miscellaneous bags	114,039	181,501	155,543
Insulating board—Canada	18,574	46,579	36,961
Plywood—Canada	—	15,796	13,313
Milk containers and miscellaneous converted paper products	31,455*	118,494	100,784
<b>TOTAL TONNAGE</b>	<b>311,221</b>	<b>631,135</b>	<b>557,643</b>

\* Includes no production of milk containers; business acquired as of April 1, 1946.

**ALLIS-CHALMERS  
COMPLETE  
DRIVES**

# *Simplify*

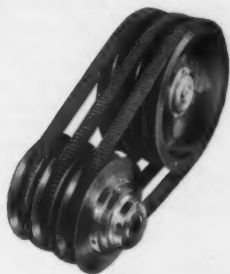
## YOUR DRIVE DESIGN PROBLEMS

**Allis-Chalmers Matched  
Motors, Control and V-Belt  
Drives Save Design Time  
and Cut Installation Cost**

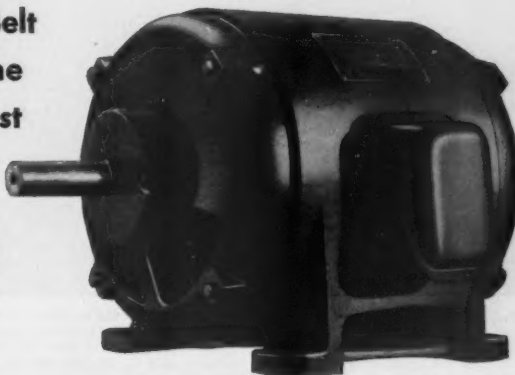


### CONTROL

Complete matched control for any motor, including manual and magnetic starters, pushbuttons, and variable speed control.



**Texrope V-BELT DRIVES** Fixed speed and Vari-Pitch sheaves with stationary or motion control. Famous grommet belt construction. Most complete line of V-belt drive equipment in the industry.



**MOTORS** Standard open drip-proof, splash-proof, totally-enclosed, fan-cooled and explosion-proof, ½ hp and up. Also wound rotor and direct current. Special motors to meet your requirements.

### Get the Kind of Help You Need

Allis-Chalmers representatives in every industrial center are at your command. Just call the office nearest you or write Allis-Chalmers, Milwaukee 1, Wisconsin for helpful literature.

Allis-Chalmers Motors and Control 5186052  
Texrope V-Belt Drives 2086051

Texrope and Vari-Pitch are Allis-Chalmers trademarks.

# ALLIS-CHALMERS



A-3780



SCOTT PAPER CO. held its first Board of Directors meeting in the Far West recently. They met in Everett, Wash., where Scott's Soundview Pulp Division is located and adjoining site for proposed two-machine tissue mill. In these views, Scott officials are inspecting the 600 ton Soundview bleached sulfite pulp mill. Above (l to r): THOMAS B. McCABE, President and Director; UMBERTO M. DICKEY, Vice Pres. and Director and former Pres. of Soundview; WIL-

LIAM CLARKE MASON, Director; STANLEY RESOR, Director; PAUL C. BALDWIN, Assistant Vice Pres. of Scott and Pres. of Coos Bay Pulp Corp., subsidiary; and C. WILLING PEPPER, Vice Pres. and Director.

Below, on digester house operating floor (l to r): LEO S. BURDON, Asst. Vice Pres.; RAYMOND C. MATEER, Exec. Vice Pres., and JOHN CARLSON, Asst. Gen. Supt. at Soundview.

### Three Programs For Victoria Meeting

Each of three association groups will have their distinctive programs when the TriWay Convention of the Pacific Coast Superintendents, Pacific Coast TAPPI and Canadian Western Technical Branch is held in the ornate Empress Hotel in Victoria, B.C., Thurs. to Sat., Sept. 25-27.

Separate plans were carried forward by the two American groups when executives of both met in connection with the Spring Superintendents meeting in Longview, Wash., May 23. Under A. C. McCorry, their chairman, the superintendents have organized committees on kraft pulping, sulfite pulping, papermaking and finishing to develop their part of the Victoria program. Under Chairman Svarre Hazelquist, the Coast TAPPI may have papers on kraft odor control, sawmill waste handling and possibly a semi-chemical pulping paper by a Madison (Wis.) Laboratory staffer. The Canadians, meanwhile are likewise working up their program.



### SCOTT PAPER PROMOTIONS

HENRY S. GODSHALL JR. (left), who takes over newly created position of Production Mgr. of the expanded Fort Edward, N. Y. Marinette Paper Co. subsidiary of Scott, and EARL F. ANDERTON (right), who is new Plant Manager of Empire, Ore., subsidiary sulfite pulp mill, succeeding Mr. Godshall. Mr. Godshall graduated from Cornell, joined Scott in 1939 and was also former Mgr. at Sandusky, O. Mr. Anderton is an MIT graduate and moves west from Chester, Pa., where he established a pulp testing station after being Tech. Director at Brunswick, Ga.

### Scott Board Meets On Pacific Coast

The Scott Paper Co. board of directors met for the first time in the Far West, as have several other major United States industries in the past year or so, but in the case of Scott it was in recognition of its huge new division, Soundview, at Everett, Wash. All but one of the 14 directors were on hand to talk over plans for expansion at Everett, where ground soon will be broken for two big Yankee Fourdrinier machines and a big paper mill. Pulp will be piped in slush form from the 600 tons Soundview mill, but the paper machines—one planned for 1953, the other for 1954—each would take only 10 to 15 per cent of the Soundview production. But Scott has ten machines at Chester, Pa., headquarters mill, and other paper mills as well as other pulp operations. (For details on Soundview-Scott integration see PULP & PAPER, Dec. 1951 issue, p. 40.)

The directors, led by President T. B. McCabe, and Executive Vice Pres. R. C. Mateer, also visited their pulp mill at Anacortes, Wash., and the Elk River Co. extensive timber holdings on Vancouver Island, in which Scott acquired ownership when it merged with Soundview.

At a dinner held in Seattle, Mr. McCabe announced a decision to award a U. M. Dickey forestry scholarship of two years' duration—\$1,000 a year—at the University of Washington, and he said the award would be made five successive years to an outstanding junior student. He said the award was made in recognition of Mr. Dickey's work in developing forest resources and forestry as head of Soundview. It was a complete surprise to Mr. Dickey.

### Howard Gerber Decides To Settle on West Coast

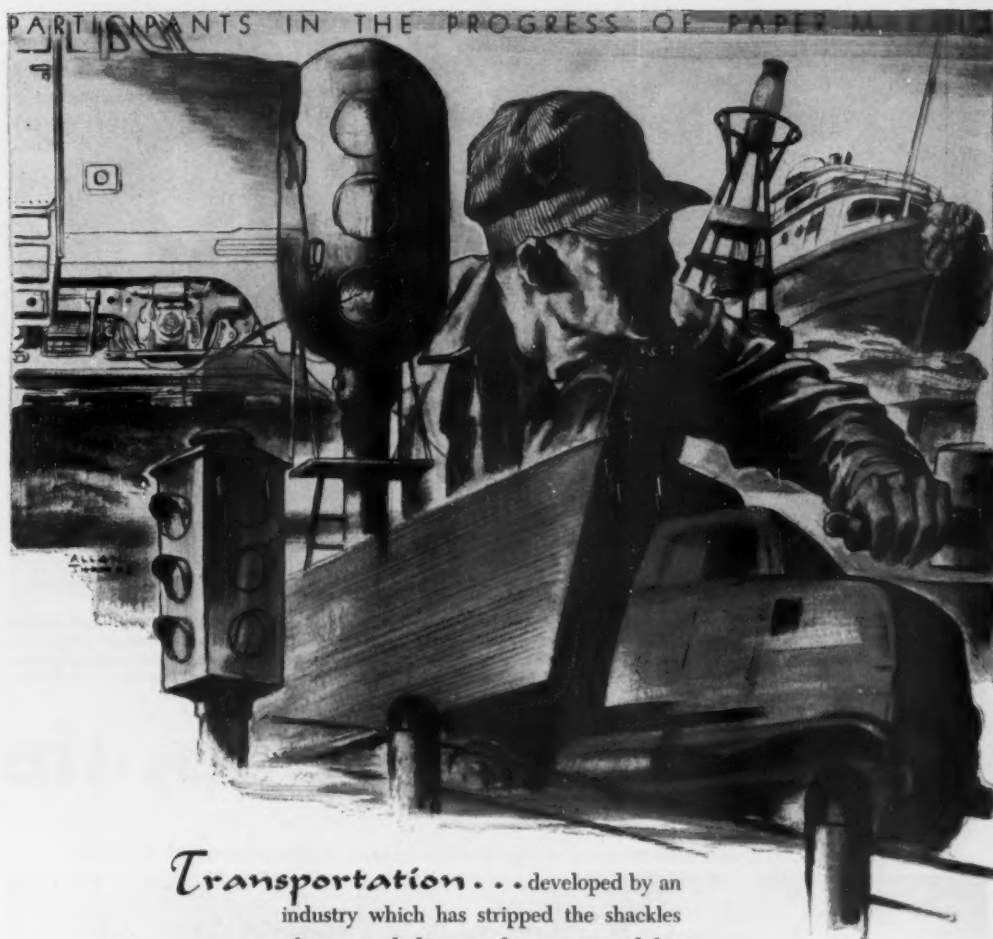
Howard B. Gerber, who has operated out of the Midwest for many years in paper and pulp mill engineering and equipment sales, has decided to shift his home and his activity to the Pacific Coast. Last month he was in the Far West on a personal survey. For the present, he is maintaining his address at 4724 Grand Avenue, Western Springs, Ill.

Mr. Gerber resigned as a vice president of Williams-Gray Co., Chicago, on Feb. 1, when he decided to move West permanently. He had been covering Pacific Coast mills as well as many in the Midwest for Williams-Gray for 16 years. Prior to that he was with a prominent pulp and paper engineering firm and participated in design and start-up of five large West Coast mills as well as several Midwest developments. Before that he spent two years in the original construction development at Crossett, Ark.

### World Conference

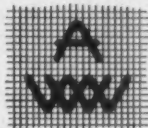
Industry representatives from many mills in Canada and the United States, as well as from some European countries, were at the International Pulping conference at Manoir Richelieu, Murray Bay, Que., followed by the summer meeting of the technical section, Canadian Pulp and Paper Association, June 16 to 21.



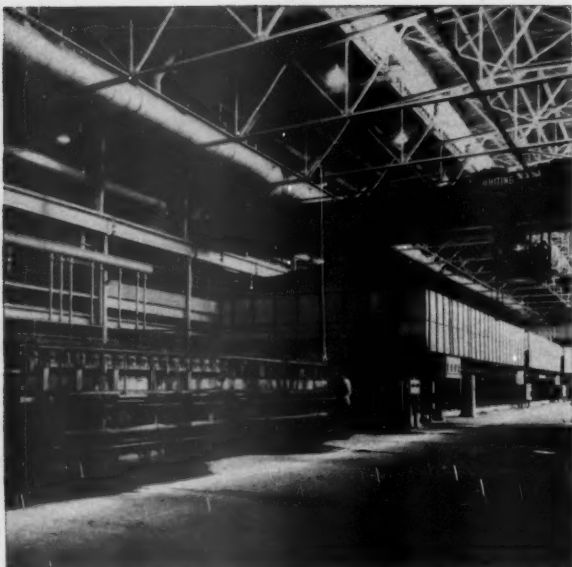


*Transportation* . . . developed by an industry which has stripped the shackles of time and distance from man and his imagination — giving impetus to paper-making and substance to civilization.

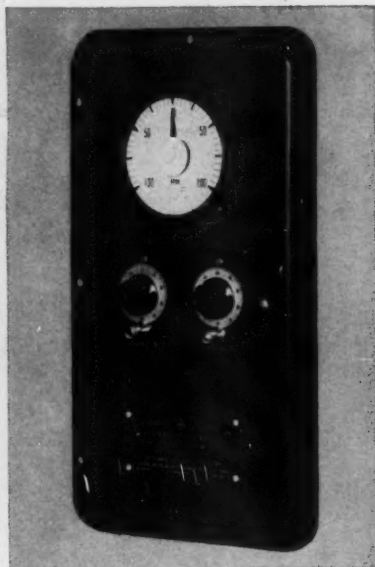
*Fourdrinier Wires* . . . fundamental to paper-making and brought to new high standards of performance by Appleton Wire Works, Inc., where for 56 years continuous research — directed toward making a better product—has *earned* the acknowledgment that "*Appleton Wires are Good Wires.*"



APPLETON WIRE WORKS, INCORPORATED • APPLETON, WISCONSIN



**New G-E draw indicator** can accurately measure speeds between adjacent wet-end sections. It is adjustable over a wide range of draw settings and paper speeds to simplify and speed start-ups and grade changes.



**To quickly identify draws** and simplify draw control, G-E draw indicators can be conveniently mounted on operator's control panels. Components are protected against dust and water.

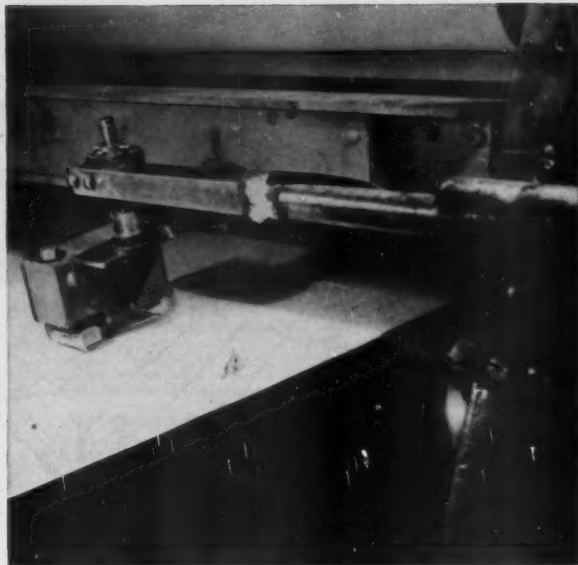
## For more tonnage, tie



**One advantage** of a G-E electronic-amplidyne sectional drive is its adaptability to new production-boosting tools such as the draw indicator and the tensiometer. As other new devices are developed, they too can be incorporated.



**New G-E tensiometer** continuously indicates sheet tension, permits accurate control of tension regardless of paper-making variables.



**Light-weight, four-inch roller** on paper tensiometer head will not mark or damage finest paper. Tensiometer can be used with G-E sectional drives to hold sheet tension automatically.

## down draw and tension

**New G-E production instruments give paper-makers closer control of draw and tension for greater uniformity and fewer breaks**

Now, to make draw and tension setting an exact science, General Electric offers two new instruments—the draw indicator and the paper tensiometer. For the first time, you can “tie down” draw measurements . . . find out optimum draw and tension values for all grades . . . repeat them every run. You get more saleable paper, less broke, lower production costs.

### **Draw indicator helps you control wet-end draw**

- Speeds sheet threading
- Reduces breaks at wet end
- Makes grade changes easier and quicker
- Reduces wraps at size presses and coaters

### **Paper tensiometer helps you control dry-end tension**

- Reduces snap-offs, wrinkles, calender cuts
- Will not damage sheet or interfere with threading
- Has fast response—works at highest machine speeds
- Permits tighter draws for faster, more uniform drying

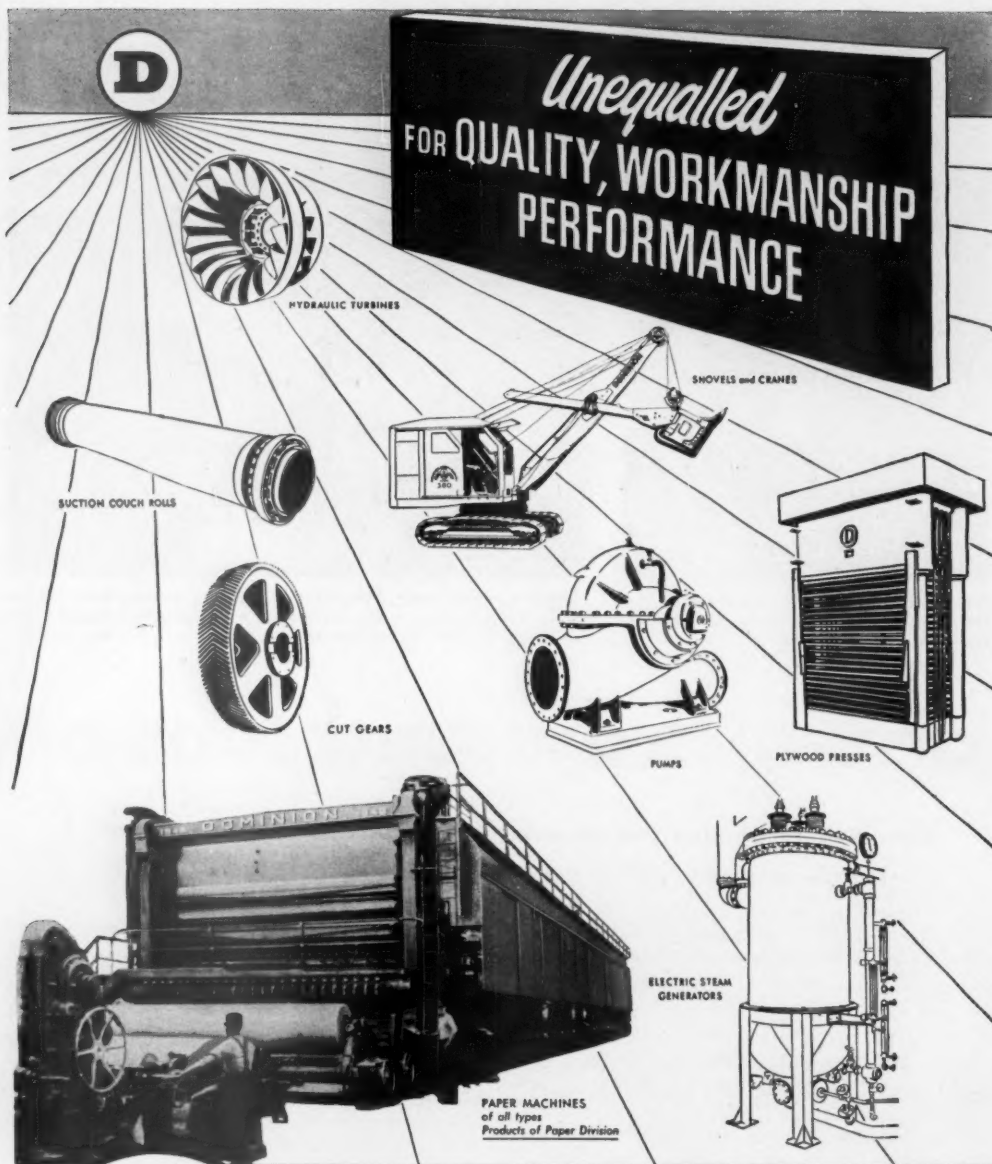
Moreover, these two devices, in combination with any G-E electronic-amplidyne sectional drive, provide a system for complete instrumentation and fully-automatic control of draw and tension.

**Your G-E sales engineer** will be glad to tell you more about these two new instruments. Call your nearest G-E Apparatus Sales Office today. *General Electric Company, Schenectady 5, N. Y.*

635-11

**Engineered electric systems for paper mills**

**GENERAL  ELECTRIC**



*built by*  
**DOMINION ENGINEERING  
COMPANY LIMITED**

MONTREAL • TORONTO • WINNIPEG • VANCOUVER



# MORE BOWATER'S KEY MEN



**MORE KEY MEN IN BOWATER'S ORGANIZATION.** Last month we published on pages 70 and 71 a number of pictures of Bowater's executives, some of whom will have advisory or even more important roles in planning and building of Bowater's new mill in Tennessee. Here are some others:

**TOM KILLIN**, of London, Director of Bowater's Thames Paper Mills.

**ARTHUR BAKER**, of London, Director of Bowater's Paper Corp., Ltd.

**FRANK DICKSON**, of Corner Brook, Nfld., Plant Engineer of the big Bowater's Newfoundland newsprint operations.

**ERIC HINTON**, of Corner Brook, who is Hydro Electric Manager of the Newfoundland Mill.

**WILLIAM BISHOP**, who is Personal Assistant in Corner Brook to the Vice Pres. and Gen. Mgr. H. M. S. Lewin of the Newfoundland operations.

**GEORGE HOBBS**, Assistant Chief Engineer (Electrical) at Corner Brook.

With General Manager K. O. Elderkin, erstwhile of Arkansas, busy in Greenville, S.C., and "hove to" in temporary hotel headquarters, plans for the new Bowater's Southern Paper Corp. two-machine 300,000-tons-per-year newsprint mill were being carried forward at a fast pace. The reason he is in the South Carolina town is that J. E. Sirrine & Co., consulting engineers and designers of pulp and paper mills, are there, although the new mill is going to be across the Smokies in Tennessee—at Charleston, to be exact.

Last month we ran a number of photographs of top Bowater's men of London and of Corner Brook, Newfoundland—men who may be called upon to assist or advise in building the new mill in eastern Tennessee. In fact, one of these—Victor Sutton, director of research and development, London—already has been "loaned" to Mr. Elderkin, and H. M. S. Lewin, v. p. and general manager in Newfoundland, and some others have journeyed to the South to look over the site and discuss plans. All of the newsprint is already sold to Southern newspapers for long terms.

On this page are a few others, prominent in Bowater's—management men and engineers. Chances are some of them may be heard from during the progress of the Southern venture.

Arthur Baker, recognized as an authority in the United Kingdom on labor union and the labor movement, is now a director of Bowater Paper Corp., living in semi-retirement in London. Sir Eric Vansittart Bowater, who heads the vast enterprises, may be making that situation something less than "semi" for Mr. Baker, now that the American venture is swinging into high gear. Mr. Baker formerly headed all operations of Bowater's in Britain, Canada, Scandinavia, where they make pulp, etc.

Mr. Baker was the founder of the British Technical Association. While Sir Eric

is credited with building up the financial end of Bowater's, Mr. Baker was the leader in technical and manufacturing development of the company.

**TOM KILLIN**, of London, is a director of Bowater's Thames Paper Mills. He also is a man with long operating experience behind him—as general mill superintendent of the Bowater-Lloyd Co., for the group of mills in London. It should be kept in mind that Bowater operates the biggest newsprint mill in the world in England, and its Newfoundland mill is one of the biggest, with its big No. 7 Dominion Engineering Fourdrinier machine one of the most modern. (potential speed-2,000 fpm).

It was the last Bowater's newsprint machine before the company ordered the pair of 227-in. Beloit, 2,000 fpm. machines, both to have the new Beloit suction pick up. This pick-up felt arrangement, incidentally, with its Beloit Cloverleaf press section following, are familiar to Mr. Elderkin, as he has just recently started up a similar installation and arrangement at Crossett Paper Mills, where he was manager, attaining an actual world record-breaking speed of 1,925 fpm. on kraft. This is believed fastest speed ever achieved on any machine except tissue. It regularly runs up to 1800 fpm. The Crossett machine is a 210 in. Fourdrinier with 34 main dryers.

Last month we ran—with many others—pictures of George Carson, assistant general manager, and Marshall Collins, New York born chief engineer at the Newfoundland mill. Mr. Carson was former chief. On this page are three key men who are working under them at Corner Brook, in engineering, and they are possible advisors and consultants for Tennessee problems:

**FRANK DICKSON**, plant engineer at the Newfoundland Mills, was born in Bury, Lancashire, a British paper center. After attending high school there, he came to Beauharnois, Quebec, where he

worked in the mill. He moved to Corner Brook in 1947.

George P. Hobbs, assistant chief engineer of the Newfoundland Mills, is directly in charge of all electrical work. He is a McGill University, Montreal, graduate.

Eric Hinton, Hydro electric manager, is one of the top key men for Bowater in Newfoundland and a specialist in his field. From Penzance, England, he went to Newfoundland in 1924, starting as a civil engineer with the contractors who built the mill. Also shown on this page is **WILLIAM BISHOP**, now special assistant to General Manager H. M. S. Lewin of the Corner Brook operations. Mr. Bishop has been some years "in charge of the manufacturing department," which in effect, was office manager, as he would be known in an American mill. He is, incidentally, the real "father" of the Boy Scout movement in Newfoundland, where he was born and raised.

Incidentally, all the photographs of Bowater's men published this month and last month were exclusive pictures made by a PULP & PAPER editor on a trip into Newfoundland.

## Powell River Speed-Up

The complete modernization and speed-up program now under way at Powell River Co. will cost about \$14,000,000, or \$2,000,000 more than originally anticipated according to President Harold S. Foley.

Since 1947 Powell River has spent more than \$30,000,000 in plant additions. By 1953 it will have increased annual output of newsprint by about 100,000 tons.



## IN CANADIAN NEWS

**ANDREW KILLIN** (left), former Gen. Supt., Bowater's Newfoundland Pulp & Paper Mills, on the startup a few years ago and on early operation of the big No. 7 Dominion Engineering machine which is reading high speeds, has now joined Ontario Paper Co., with headquarters at Thorold, Ont. Before going to Bowater's, he was Supt. at Ontario Paper's subsidiary Quebec North Shore mill in Baie Comeau, which held world speed records until recently. He was born in Somersetshire, England (which the natives call Zomerzet), and was in newsprint manufacturing with other Canadian mills in Three Rivers before helping start up the new Baie Comeau Mill in 1937.

**ALEXANDER P. LEBINGHAM** (right), former Steam Plant Supt., Bowater's Newfoundland, has now retired, according to news from Corner Brook. He didn't quit, however, until he had established a record as eldest superintendent in the mill, where he went to work 23 years ago. He was a government boiler and World War I marine engineer. Was born in St. John's, Newfoundland.

# Personals

## NORTHEAST NOTES

**ANDREW M. McBURNEY**, formerly sales manager, has been named general manager of sales of Oxford Paper Co., by **HUGH J. CHISHOLM**, president. Mr. McBurney replaces **HAROLD H. HOLDEN**, who has resigned to become president of Eastern Corp., Bangor, Me. Mr. McBurney has been with Oxford since 1935, and until recently has been on loan to OPS where he was chief of the Pulp, Paper and Paperboard Branch, Forest Products Division. Associated with him as manager of sales will be **OLIVER S. BARRIE**, who has been in charge of western sales for the company for 10 years.

**WILLIAM H. DONALDSON, SR.**, whose death in late May was mourned by many friends, had been associated with the industry almost 50 years. A retired secretary-treasurer and director of Perkins-

Goodwin Co. since 1947, Mr. Donaldson began in the industry with Union Bag & Paper Corp. in 1899. Before joining Perkins-Goodwin in 1926 he was a member of his own firm, the Howell-Donaldson Co., in pulp sales. A son, **W. H. Donaldson, Jr.**, is a vice president of St. Regis Sales Corp., and he is also survived by his wife, Mrs. Jane A. Donaldson, and a daughter, Jane.

**A. DONALD TRIST** was elected chairman of the board of Trist Paper Coatings, Inc., Worcester, Mass., at a May meeting. Other officers elected were: **ELI DE VRIES**, president; **DAVID N. FINNIE**, vice president; and **CHARLES SUMNER BARTON**, secretary treasurer. In addition to these, **ROBERT S. BOWDITCH** was named to the board.

**JOHN STEINBINDER**, who was chief of the Chemical and Related Products Section, NPA, Washington, has recently gone back to Riegel Paper Corp., Milford, N.J. **Walter L. Potter Co.**, U. S. National Bank Building, Johnstown, Pa., has been appointed representative of Heppenstall Co., Pittsburgh, for the sale of machine knives for the pulp and paper industry in Pennsylvania and Western Maryland.

**ELMER MITCHELL**, Glassine Paper Co., Manayunk, Philadelphia, chairman of the Pennsylvania-New Jersey-Delaware Division of Superintendents, has announced that the 1952 Fall Meeting of the division will be held Sept. 26-27 at Galan Hall Hotel, Wernersville, Berks County, Pa.

**DR. MICHAEL SZWARC** has been named professor of physical and polymer chemistry at the State University of New York College of Forestry, Syracuse, N.Y. He will do academic training and research in cellulose and polymer chemistry in an intensified program at Syracuse. **C. M. CONNOR** has been elected a vice president of W. C. Hamilton & Sons, Miquon, Pa. Since his graduation from Syracuse University in 1927, Mr. Connor has been with Glassine Paper Co., the Ohio Boxboard Co. and the War Production Board. He joined W. C. Hamilton in 1949. Other Hamilton officers re-elected include: **H. H. HANSON**, president; **LANE TAYLOR**, executive vice president and treasurer; **J. H. DUNTON**, vice president in charge of sales; **E. W. JONES**, controller; and **CHARLES GIDLEY**, assistant treasurer.

## Here Swenson Can Help You...

- Evaporators
- Pulp Washers • Deckers • Filters
- Digester Blow Condensers
- Surface Condensers
- Turpentine Condensers • Causticizers

Send for Bulletin E-108

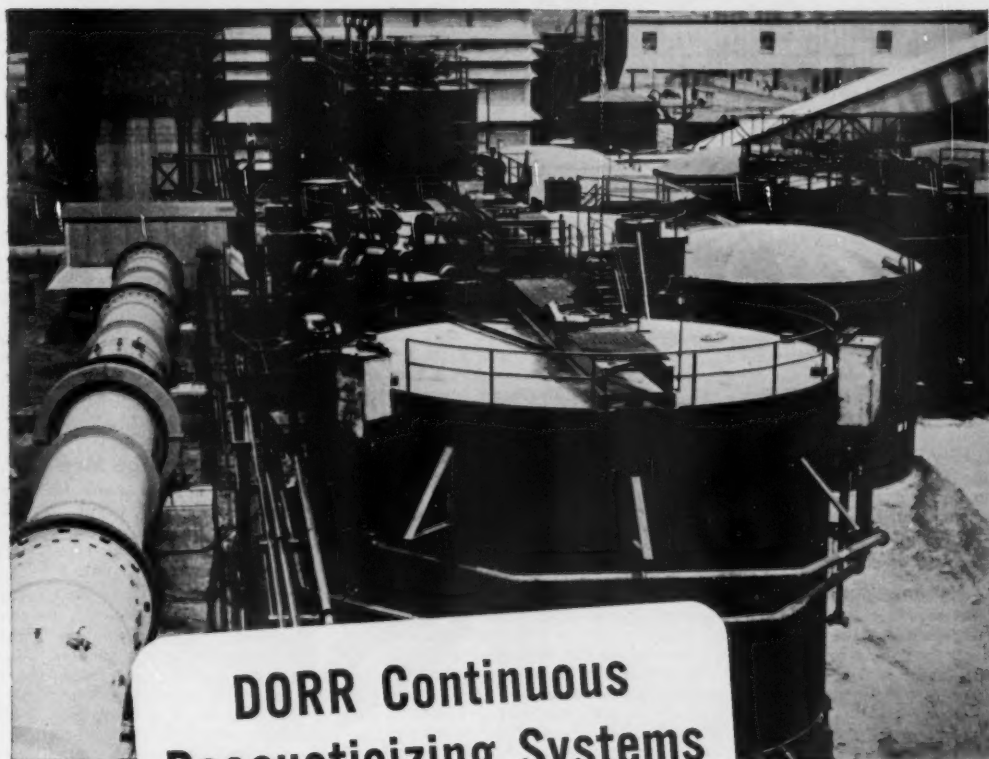
# SWENSON

REG. U.S. PAT. OFF.  
SWENSON EVAPORATOR COMPANY

DIVISION OF WHITING CORPORATION  
15632 Lathrop Ave. Harvey, Illinois  
ARDMORE (Phila.): 9 Rittenhouse Pl. HOUSTON 2: 825 M & M Bldg.  
BIRMINGHAM 3: American Life Bldg. PITTSBURGH 22: 214 Empire Bldg.  
BUFFALO 2: 610 Jackson Bldg. NEW YORK 7: 30 Church St.  
CINCINNATI 2: 729 Fed. SEATTLE 1: 1326 Fifth Ave.  
Res. Bank Bldg. TORONTO 9: 185 Eileen Ave., Box 69—Station D



for producing the cooking liquor every pulp mill needs



## DORR Continuous Recausticizing Systems

This Dorr Continuous Recausticizing System . . . incorporating all of the newest developments resulting from The Dorr Company's extensive experience in the pulp and paper industry is installed at a large paper mill in the state of Georgia. Consulting Engineers: J. E. Serrine Company, Greenville, South Carolina.

If you would like information about the newest equipment and techniques in continuous recausticizing, drop us a line and ask for a copy of Dorr Bulletin No. 3301.



Better tools TODAY to meet tomorrow's demand

# DORR

WORLD - WIDE RESEARCH • ENGINEERING • EQUIPMENT

THE DORR COMPANY • ENGINEERS • STAMFORD, CONN.  
Offices, Associated Companies or Representatives in principal cities of the world.



# MANAGEMENT AND SAFETY

## A RESPONSIBILITY FOR EVERY TYPE OF EXECUTIVE

By M. J. Foley

Executive Vice President, Powell River Company

Industrial safety is one of the key problems of management. It is our job, first, to insure that this industry, is kept alive and operates with maximum smoothness and efficiency at minimum costs.

That brings us directly to safety, because safety does affect the cost and efficiency of our operations. Last year, accidents to employees cost the logging industry of British Columbia for compensation and medical aid, a total of \$3,431,473. The logging industry pays an assessment rate of 7½% of payroll to the Workmen's Compensation Board, although for the past two years only 3 assessments made a net rate of 5.62½%.

With soft spots showing up in our business, and with no signs of any betterment in the months ahead, the money we are paying out for accidents would look mighty nice on the other side of our ledgers.

But that is only part of the story. In addition to the actual compensation and hospitalization costs of an accident, the real costs are *four times this figure*. Accidents in many instances involve heavy losses of material or expensive repairs. In almost every case, accidents cause disruption of the job and training new men, all of which eat seriously into efficiency and therefore add costs to the operation. Serious accidents invariably mean a setback in morale, lower efficiency and disrupted team work.

An executive these days has many and varied responsibilities:

1. To The Public: Stability of industry is vital to public welfare and a company must work for a stable and profitable industry which will provide continuing employment, bear a fair share of public taxes and generally contribute to the prosperity.

2. To his employees. He should provide continuing employment at fair wages which will enable employees to live comfortably and take care of dependents. Their well-being hinges on the industry's ability to produce at a profit.

3. Shareholders. The men and women who invested their savings in your industry are entitled to a fair return. They made operations possible.

Accident prevention directly affects the results obtained in each of these fields; for which one or more executives are responsible:

**Public relations:** As long as accident rates are high we will have scare headlines, unfavorable editorials, and adverse public sentiment. All these reflect on the industry and make operations more difficult and expensive.

MR. FOLEY, the author, knows the problem from Florida to the West Coast. He was former Forest Industries Representative on Industrial Commission.



**Employe relations:** Unsafe camps and low production camps are synonymous. Good men don't want to work in those camps and new men hesitate to hire out. Low morale resulting from a bad accident record encourages dissatisfaction, causes friction and creates conditions favorable to more accidents.

**Production:** I do not need to tell you of various factors contributing to loss of production, but I would like to mention one which is seldom included in reports—labor shortage. Last year 5,540 men employed in the logging industry in British Columbia suffered compensable injuries. The average length of disability was 50 days. The Compensation Board bases its disability figures on calendar days and if you reduce this to the five day week you will find the labor cost in 1951 totalled 200,000 working days. A total of 740 men were on compensation every calendar day in the year. If you include fatals and permanent disabilities the total would be at least 800 men. Generally speaking, the industry was short-handed all year. Don't you think that the cost of recruiting 800 men was wasted?

**Sales:** First, you can't sell something you don't produce and second, there is often a lowering of quality following accidents.

**Finance:** The direct effect of a high accident rate is increased cost of production. A bad safety record never helped anyone with his banker.

Another factor which is seldom considered is overhead. When you lose one load or 20 as the result of accidents, the overhead has to be spread over the loads you do get. More emphasis should be placed on labor turnover cost resulting from accidents. Every executive who deals with finance knows that accident costs are several times greater than compensation costs. A one dollar compensation item on our books means dollars hidden in some other accounts.

An executive must delegate authority and responsibility to others. In accident

prevention he does this by creating safety departments. But leadership and inspiration must come from the executive. Once it is established that top management is sincerely safety-minded, then the safety director can be fairly certain of gaining recognition and acceptance by the entire organization.

The safety director can only sell safety. He is rarely given any authority over men in the camps, and that is as it should be. The superintendent must be the boss. He is the man to whom the executive must look for results. Through his line supervision the superintendent must see that everyone in his organization knows what is expected. He must be the real safety director in his camp, for he is the man, and the only man, who can really make the program effective.

### Powell River Co. To Train College Men

Recognizing the need for a pool of technically-trained talent, Powell River Co., Vancouver, B.C., has established a plan for training university undergraduates in its mill operations.

With co-operation of the University of British Columbia, the plan has two main objects: 1. It is helping the company to create a group of students who, upon graduation, will have received practical experience in mill operation; 2. It assists undergraduate engineers to familiarize themselves with the industry under an organized plan to the mutual advantage of the industry and the engineering profession.

Selection is made of a limited number of students with suitable academic standing who have completed their first year of applied science and will have three vacation periods in which to work in the plant. For the first two summers the program is the same for all students and includes half a vacation period in each of the four major divisions—groundwood, sulfate, paper machines and maintenance services. During the third vacation period, students who are to graduate in chemical engineering normally are attached to the company's control division for specialized work. Those who are to graduate in mechanical, civil or electrical engineering do further work in mechanical departments or some allied field.

### Shelton Mill Record

Shelton, Wash., division of Rayonier Inc., George Cropper, resident manager, captured the safety record for the company's four mills recently with 246 no-loss-time-from-injury days.



Take a tip  
from  
Cinderella



A "perfect fit" pays off . . . whether it's trying on shoes for Prince Charming or selecting supplies for paper production.

Even without a magic wand, you can be sure that the corn products you use are *exactly* right for each of your processes. Anheuser-Busch not only offers you a complete line of *standard* starches and other corn products for paper mill use, but also will *tailor-make* a special formula or product to your specifications.

And, standard or special, all products bearing the Anheuser-Busch name assure you of the dependability and uniformity that have *built* our world-famous reputation for highest quality.

**CORN STARCHES**  
**DEXTRINES**  
**GUMS**  
**CORN SYRUPS**



FOR FURTHER INFORMATION PHONE OR WRITE

**ANHEUSER-BUSCH, INC.**

**CORN PRODUCTS DEPARTMENT**

**ST. LOUIS, MO.**

# Modernization Pays

Profits from stepped-up production, better sheet quality and a wider range of paper products have paid for machine modernization programs in some of America's greatest mills.

Modernization may mean the replacement of an obsolete drive, the addition of a new Wet End, a new Press Part, a new Size Press. It may call for the replacement of inefficient dryers. It might be the complete rebuilding of the machine itself.

As a typical example, Union Bag and Paper Corporation, Savannah, Ga., recently replaced all the low pressure 65 pound dryers (71 paper and 18 felt) in their No. 4 machine with new high-pressure 125 pound dryers. In a unique operation, their engineers, maintenance and operating crews made the change while the machine continued to turn out paper, by isolating each of the four dryer sections in turn, then bypassing that section in which the new dryers were being installed. The machine was

stopped only long enough to disconnect the dryer section to be changed. About a week prior to each shut-down the bottom dryer felt on the particular section was removed and necessary work begun to permit bypassing the sheet.

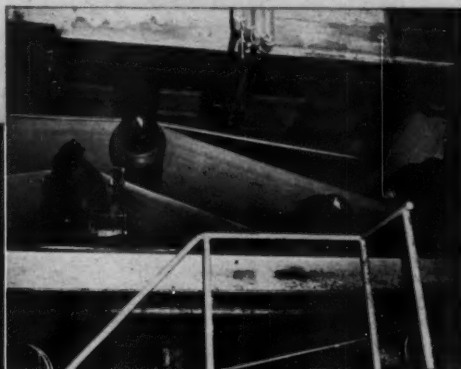
If you are faced with high maintenance costs, if you require a greater range of high grade paper products — whatever your modernization problems may involve — get the benefits of Pusey Jones experience. Call or write us today.

**THE PUSEY AND JONES CORPORATION**  
Established 1848. Builders of Paper-Making Machinery  
Fabricators and Welders of all classes of Steel  
and Alloy Products  
Wilmington 98, Delaware, U.S.A.



High-pressure dryers in place ready for installation of felts.

Basement run of paper when by-passing the isolated section and while new dryers being installed.



## Rayonier Starts Work On New Pulp Mill

Ground was broken June 5 for Rayonier Inc.'s new \$25,000,000 pulp mill at Doctortown, Ga., with Clyde B. Morgan, Rayonier's president, participating. The new mill, the company's fifth, is to produce 250 tons per day of chemically purified wood cellulose, and is expected to be in operation early in 1954.

Rayonier, which is this year celebrating its 25th anniversary, and whose first 25-year men were honored in ceremonies at Shelton, Wash., June 18, is a leading producer of purified wood cellulose, with major uses being in synthetic fibers, rayon and acetate, plastics, film, filament and cellophane.

The Doctortown plant is Rayonier's major development in its \$80,000,000 post-war expansion program which began late in 1950, and will add 87,000 tons capacity to the company's annual operations. Ebasco Services Inc., New York City, is engineering the mill.

Although nothing specific has been revealed as to processes, Mr. Morgan has announced that the new plant "will use an improved process recently developed by the company's research and engineering division in its manufacture of superior grades of wood cellulose, primarily for high tenacity yarn applications." If necessary, the plant will be able to produce nitration pulp for military explosives in addition to cellulose for standard textile yarns.

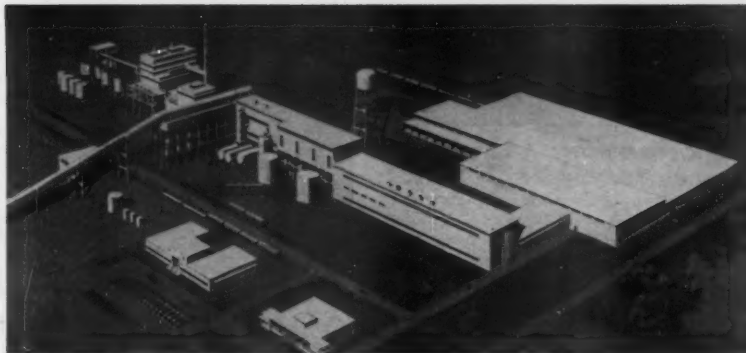
The company will employ about 450 persons in the new mill with an additional 500 required by contractors supplying pulpwood. The pulpwood requirements are set at 550 cords a day, part to come from Rayonier-owned timberlands, and much from local timber owners.

Mr. Morgan told Georgia visitors to the mill site that Rayonier now represents 61% of U.S. dissolving wood cellulose capacity; 37% of North American capacity; and 20% of world capacity.



### RAYONIER APPOINTMENTS

THEIR PICTURES TAKEN in balmy Florida by PULP & PAPER, these two young Rayonier Inc. executives were dressed to keep calm and cool: GEORGE E. SCOFIELD (left), has been appointed Asst. Res. Mgr. of the Fernandina, Fla., mill under Mgr. Fred Doherty, as announced by Vice Pres. (Mfg.) W. E. Breitenbach. Graduate of U. of Washington, with Rayonier since 1937, he started at Hoquiam, Wash., Mill. STEVE RUPERT (right), who leaves the Fernandina post which Mr. Scofield takes over, has moved to Hoquiam, Wash., to be Asst. to the Res. Mgr. He was at the Shelton, Wash., Mill before moving to Fernandina.



A DRAWING OF PROJECTED NEW PULP MILL being built by Rayonier at Doctortown, Georgia. Drawing was by construction engineers, Ebasco Services Inc., New York.



IN KEEPING WITH THE HIGH PITCHED TEMPO of modern industry, Clyde B. Morgan, President of Rayonier, Inc., mans a bulldozer instead of the traditional shovel as he breaks ground for the company's new \$25,000,000 chemical cellulose plant at Doctortown, Ga.

## World-Circling Engineer Reports on French Industry; Plans for New Zealand Mill

Although newsprint manufacture has not been affected so far, the pulp and paper industry in France is still facing a critical situation, according to P. R. Sandwell, head of the Vancouver, B.C., engineering firm of Sandwell & Co., who recently returned from a business tour that took him around the world.

Orders and prices have slumped and many French mills have shut down, or curtailed operations, reported Mr. Sandwell. Newsprint, however, has been in short supply in France.

The long-term problem of the industry in France has been to insure a supply of raw materials, and Mr. Sandwell says that the first consideration is to replace the traditional source in Scandinavia. Until comparatively recently, France imported both pulpwood and pulp from Scandinavia, but it is becoming increasingly difficult to get orders filled. Some imports from North America have been negotiated.



P. R. SANDWELL, Pulp and Paper Engineer, home from trip around the world.

France is turning to alternative raw materials, and in recent months has made some progress in the utilization of wheat straw and plantation woods from the south of France, with the possibility that pulping material may also be brought in from French colonial Africa.

The current situation has encouraged technical research aiming at more complete utilization through development of processes to extend the uses of semi-chemical and groundwood pulp. There has been a continued trend towards modernization of French mills, many of which are quite old, according to Mr. Sandwell.

"Owing to inflation, the building of new pulp and paper mills in France has been virtually prohibitive," said the Canadian engineer. "Even though the operating costs of a new mill would probably be considerably lower, construction costs are still out of all proportion and for that reason reconstruction and re-equipment are in order."

Mr. Sandwell flew from Vancouver to New York, where he conferred with officials of Celanese Corp. of America, for whose Celgar development in southeastern British Columbia he has been doing the preliminary engineering. After a week in France he went to Switzerland to consult with equipment manufacturers, and from there flew via the Middle East and India to Auckland, New Zealand, where he has been consultant to Tasman Pulp & Paper Co., now proceeding with a \$35,000,000 newsprint and chemical pulp mill.

### \$1,000 Prize

For a suggestion to maintain a proportioning balance between groundwood and sulfite pulp regardless of consistency charges, William McMillan of Powell River Co.'s mechanical staff at Powell River, B.C., was recently presented a check for \$1000.

# Personals

## PACIFIC COAST NOTES

**GEORGE E. FROMME**, of New York, supervisor of paper chemicals department, in charge of sales of all types of sizes, for American Cyanamid Co., was a visitor at some West Coast mills last month with **ED GARRISON**, of Seattle, Pacific Northwest manager. They even got in a day of fishing in Idaho. It was a nice day.

**ROY CRAWSHAW**, an executive of Western Gear Works, was elected president of the American Gear Manufacturers Association at their recent sessions in Hot Springs, Va. This is the second time an official of the Western Gear Works has served in this capacity. **THOMAS J. BAN-NAN**, company president, served as AGMA president in 1946-47. Mr. Crawshaw headquarters at executive offices in Lynwood, Calif.

**WILLIAM CLINES**, Los Angeles manager for General Chemical Co., formerly in Seattle, has lately taken up tennis actively and one of his opponents was Helen Wills Moody.

**JOE BLAKE**, now representing Electric Steel Foundry as manager of its Los Angeles office, expects to be climbing around pulp mills again, as he used to do in Washington, if the new mills go up in the Southwest parts of Texas, Louisiana, etc., which are in his territory.

**HARRIS FENN**, Pacific Coast manager for National Analine Div., Allied Chem. & Dye, had his brother along on a recent trip to California mills. Harris actually has to look up to his brother, believe it or not.

**JAMES M. RUBUSH**, Pacific Coast representative of **IMPSCO**, has moved to a new home in Wenatchee, Wash., out on the end of Okanogan St., on Rural Route No. 4 and the phone is Wenatchee 02416. Besides his activity in Impco sales and evaporator design, his ranches are also keeping him busy.

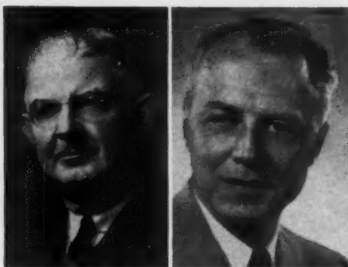
**EARL VAN POOL**, Pacific Coast manager for the Brown Co., out of San Francisco, was a recent visitor in the Pacific Northwest.

**STANLEY RINGHEIM**, purchasing agent of Central Engineering, Crown Zellerbach, went east for the national convention at Atlantic City of the national p.a. organization in which he has long been a leader.

## New Stauffer Office Scene of Meeting

The new sales and administrative office building of Stauffer Chemical Co., North Portland, Ore. was scene of a regional meeting recently when leaders of industries met with top executives of the company to inspect the new building and to learn of the company's plans for expansion in the Northwest, according to Dan J. Keating, Stauffer division manager.

Officials of the firm who came from San Francisco for the meetings were Christian De Guigne, president, F. W. Wieder, vice president and Vincent O'Donnell, director.



## ADVANCE IN MEAD

**H. E. TETER** (left), who has been advanced to Production Mgr., of all White Paper Operations of The Mead Corp., under Vice Pres. George Fringle. Mr. Teter was Division Mgr. in Chillicothe, O., since 1930 and will remain in that city. **O. S. MASON** (right), who succeeds Mr. Teter as Division Mgr. at Chillicothe. He was Assistant to the Exec. Vice President.



## IN EASTERN NEWS

**THOMAS H. (HOD) MULLEN** (left), has been appointed Deputy Director of the Pulp, Paper and Paperboard Div., National Production Authority, Washington, D. C., according to Director Lyall Tracy (on leave from Rayonier). Mr. Mullen formerly headed a paper sales company in Hawaii and was also formerly with Clarament Paper, Cherry River and Gaylord. **OLLIE W. W. MESSNER** (right), is back in his New England country, now at Gill Division, American Writing Paper Corp., Holyoke, Mass. The widely known Superintendent was at American Coating Mills in Middletown, O.



## INDUSTRY ADVANCES

**W. H. GRAEBNER** (left), who has been promoted to Chief Mill Manager for Marathon Corp., with headquarters in Menasha, Wis., as announced by Exec. Vice Pres. Roy J. Sund. For a year and a half Mr. Graebner has supervised Marathon's new operations at Oswego, N.Y., and Sunnyside, Wash., and also the Menominee, Mich., mill. In his new role he also has charge of Ashland, Rothschild and Wausau, Wis., operations, Schools at Lawrence College and U. of Wisconsin, he joined Marathon in 1927 as a Chemist. He was former Manager of Menasha plants.

**E. L. OLIVER JR.** (right), who has become Executive Vice President of Oliver United Filters, Inc., of New York, Chicago and Oakland, Calif. He was Vice Pres.-Mgr. He now has broader administrative responsibilities.

# Personals

## SOUTHERN NOTES

**GEORGE E. SCOFIELD** has been promoted to assistant resident manager of Rayonier Inc., Fernandina, Fla., according to William E. Breitenbach, vice president in charge of manufacturing. Mr. Scofield was graduated from the University of Washington, Seattle, and formerly was with Rayonier in Hoquiam, Wash.

**GEORGE E. JACKSON** has been promoted to assistant superintendent of the Fernandina Mill of Rayonier, according to Res. Mgr. Fred B. Doherty. Mr. Jackson was graduated from McGill University, Montreal, and formerly worked in several Canadian mills.

**W. J. BRIDGES**, of Hollingsworth & Whitney (Mobile, Ala.), and **L. E. KING**, Champion Paper & Fibre Co. (Huntsville, Texas) were named chairman and vice chairman respectively for the Southwestern District, American Pulpwood Ass'n. An invitation to hold the next meeting in Crossett, Ark., Oct. 29 and 30, has been extended by **CHARLES MAKI**, of Crossett Lumber Company.

**FREDERICK D. THAYER, JR.** has been made assistant manager of the Tannin Extract Division of The Mead Corp., DR. **E. S. FLINN**, manager, has announced. He will be located at Lynchburg, Va. Mr. Thayer has been working at the Stamford Research Laboratories of the American Cyanamid Co. He is a native of Dudley, Mass.

**F. T. WHITED, JR.**, and **R. T. MOORE**, who had been respectively president and a director of Frost Lumber Industries, Inc., Shreveport, La., prior to stock exchange absorption by Olin Industries, Inc., have been named directors of Olin.

**J. H. MARTIN**, production manager of Sonoco Products Co., Hartsville, S.C., will visit India to survey the possibilities of establishing a company cone plant in connection with paper mills there. He will visit company plants in England and Australia.

**KIRKWOOD F. ADAMS**, vice president and resident manager of Halifax Paper Co., Roanoke Rapids, N.C., was "saluted" as Papermaker of the Month in a recent Noble & Wood issue of its **AGITATOR**. It said a new 226 in. machine at his mill will make 200 tons of kraft a day.

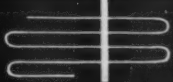
**E. A. MURPHY** has been named paper mill superintendent of the St. Regis Paper Co.'s Jacksonville, Fla., mill now in course of construction.

**POSEY N. HOWELL**, of Howiston, Miss., a pioneer in good forestry management, succumbed June 6. He served as forester and agent for L. N. Dantzer Lbr. Co., from 1897 for many years, as forestry consultant and public relations counselor for International Paper since 1925, as member of the Mississippi Forestry Commission from 1926 until 1940, and supervised the first private tree plantation in Mississippi in 1926.



*The demand is for better paper...  
made with Controlled Conditioning*

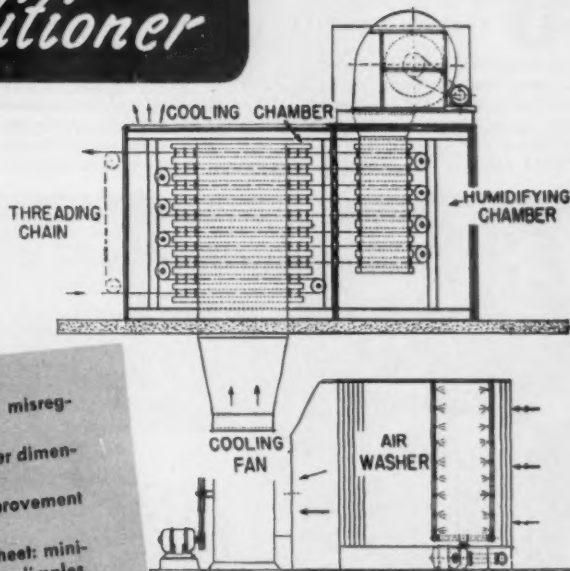
**ROSS**



*Cycle Conditioner*

With the Ross Cycle Conditioner more and more mills are now furnishing practically custom made paper with moisture content adjusted for the individual requirements of the customer. These mills have found that they not only get a better price for this better paper but greatly improve their competitive position and secure excellent returns on their investment in the conditioning equipment. In every installation the following results have been secured:

1. Higher moisture content minimizes misregister in multi-color printing.
2. Cycle-conditioned paper has greater dimensional stability.
3. A more flexible sheet. Striking improvement in folding quality.
4. Relieves stresses and strains in sheet; minimizes development of cockles or dimples.
5. Increased weight and tonnage from additional water.
6. Better printability.
7. Nearly complete elimination of curling.
8. Greatly minimized development of static.
9. Uniformly cool paper which resists subsequent moisture changes.
10. User satisfaction. Marked reduction in paper customer complaints.



The Ross Cycle Conditioner adds any reasonable moisture content, uniformly and controllably, on webs up to 200 inches wide at speeds up to 2000 ft. per minute. It can be used as a separate operation or in synchronism with other operations. It will pay you to investigate the economic advantages of installing this conditioning equipment.



**J. O. ROSS ENGINEERING CORPORATION**

MANUFACTURERS OF AIR PROCESSING SYSTEMS

444 MADISON AVENUE

NEW YORK 22, N. Y.

201 N. Wells Street, CHICAGO-6 • 79 Milk Street, BOSTON-9 • 9225 Grand River Avenue, DETROIT-4 • 600 St. Paul Avenue, LOS ANGELES-17  
ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

July 1952

61

# NEW MACHINE HEART OF PLANT

Expansion of paper converting for the fabulously-growing Pacific Coast market by a new half-million dollar factory for a western firm founded in 1936 with a \$350 investment and the determination to make better packages. That is the story behind Andre Paper Box Co. of San Francisco, makers of special folding boxes for food, gifts, flowers, candy, department stores and many other fields, whose new plant is across San Francisco Bay at San Leandro, Calif. Announcing its completion, Noble Andre, owner and general manager, said: "We are now making as many boxes in a single day as the company made during its entire first year of operation."

Much of the company's progress during the past six years may be traced to its work with laminated board. Its new laminated folding boxes, for example, replaced set-up boxes in many major West Coast department stores.



NOBLE ANDRE (left), owner and General Mgr., Andre Box Co., using radio phone in his car while en route from San Francisco office to new plant in San Leandro, Calif. (shown at right).

## Develops New Machine

To gain this high volume production, however, Andre virtually had to enter the machinery business. Development of these boxes, lined with fancy papers and foils, was started with an old sheet-liner machine. Increased sales demand led to a

search for a machine capable of producing laminated sheets which would lie flat without curling at high speeds. Mr. Andre engaged four engineers in the mechanical, electronic and chemical fields, and plans were drawn under his direction for a laminator of his own design.

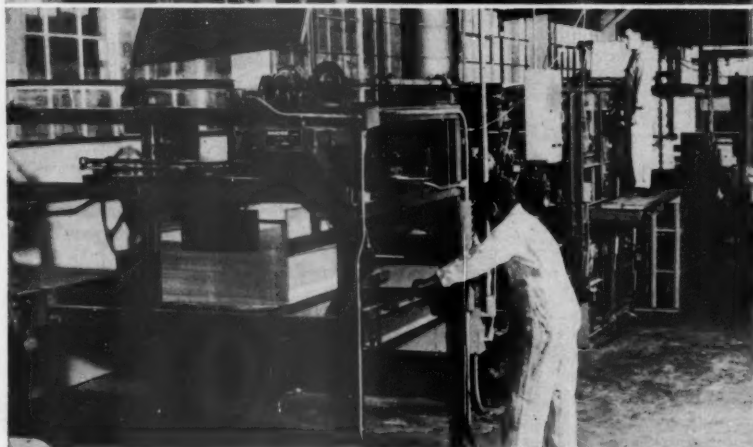
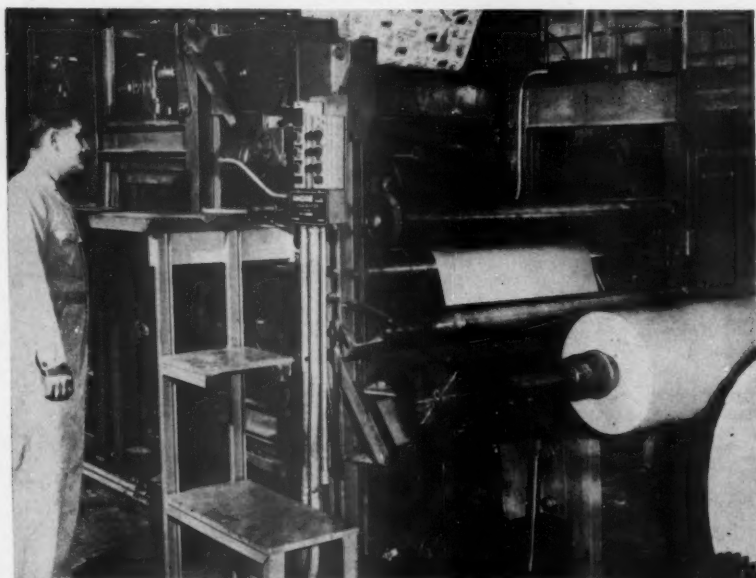
In 1949 one of the large paper mills asked the company to build a similar unit for them. The resulting Andre-matic Laminator embodied all of the principles of the first machine, with greater strength and ability to stand up under extremely high speed production. Completely automatic, it requires only two operators. Its features include electric eye registration control, special "anti-curling" safeguards and automatic sheeting and stacking.

High-speed 4-color rotary presses print the desired design in register for cutting presses on roll-fed paper. This is then automatically laminated to boxboard, also roll-fed, by the Andre-matic Laminator.

Fabrication of the laminator's component parts is being sub-contracted out to three different firms at present by the Andre Paper Box Co. Each of the units now in use was built at the specific request of firms which had heard about them and wanted similar machines to use in their own plants. Four paper mills are now using Andre-matic Laminators. So are three paper box companies.

The new San Leandro plant is designed for fast, flexible production. Cantilever-braced roofs eliminate any need for columns or bracing posts—permitting the use of a broad range of materials handling methods, from lift trucks to conveyors.

Andre's headquarters are at 545 Mission St., San Francisco. Here Douglas Ames Wheelock heads design and research, Arthur J. Loesch heads sales.



UPPER VIEW—At Andre Paper Box Co. printed paper passes directly from rotary press to Andre-matic Laminator above, where it is automatically laminated to roll-fed boxboard. Seven other paper mills and converters across the nation have acquired similar units.

LOWER VIEW—Heart of Andre Paper Box Co.'s San Leandro operations is its Andre-matic Laminator, one of which is shown here in its entirety. Utilizing new principle of folding box manufacture, they were developed within the company when no outside-built machines could be found to do the task. The machine requires but two operators and automatically registers, laminates and sheets roll-fed printed paper and raw boxboard into one integral, stronger unit, ready for use in box production.

# 3 new features

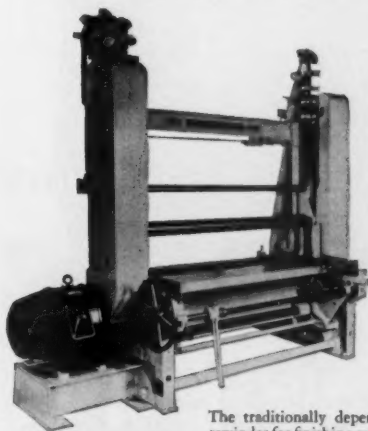
for improved roll quality and  
reduced maintenance cost

These three new design features of the Camachine Commander virtually eliminate vibration and provide for superior strip control:

1. **Riding Roll Drive:** Impregnated woven flat belts and crowned pulleys drive the riding roll from *both* ends. Adjustable tension apparatus automatically establishes *equal* tension on *both* riding roll belts, and permits variation of riding roll torque to suit the material characteristics.
2. **Rewind Shaft Bearings:** The rewind shafts are mounted in ball thrust bearings which are contained in sliding carriages in the vertical guide bars. The carriages are fitted to eliminate end play of the shafts.
3. **Rewind Drum Drive:** Positive toothed belts, which require no lubrication, are used to transmit driving power to the front and rear rewind drums.

For complete details on the new Camachine Commander write for Bulletin 2000.

CAMERON MACHINE CO. • 61 Poplar Street, Brooklyn 2, N. Y.



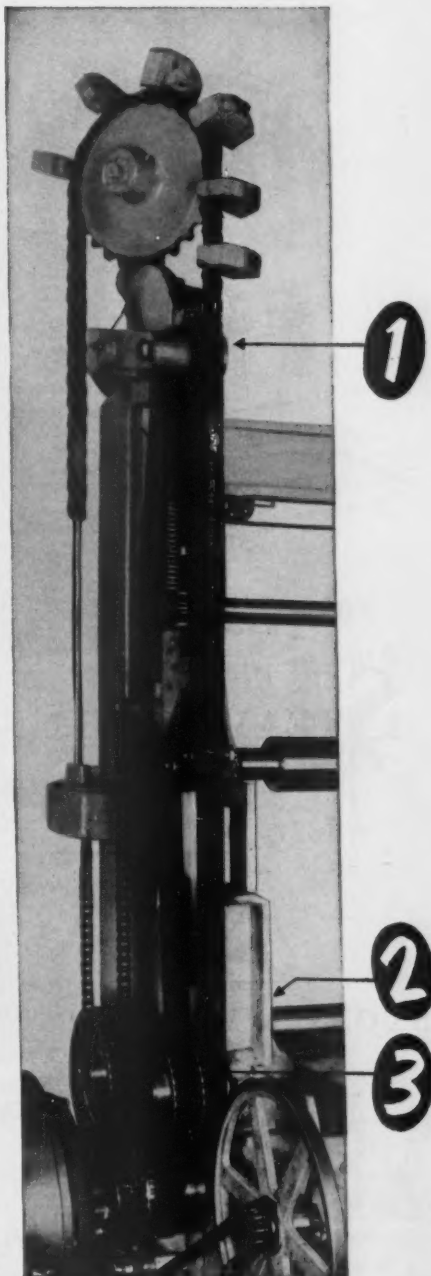
## The New CAMACHINE COMMANDER TYPE 10

Speeds up to  
2000 FPM

Widths from  
42" to 82"

Rewind dia.  
up to 40"

The traditionally dependable heavy-duty slitter-rewinder for finishing rooms and converting plants.



LOOK FOR ENGINEERING LEADERSHIP  
AND YOU'LL WIND UP WITH

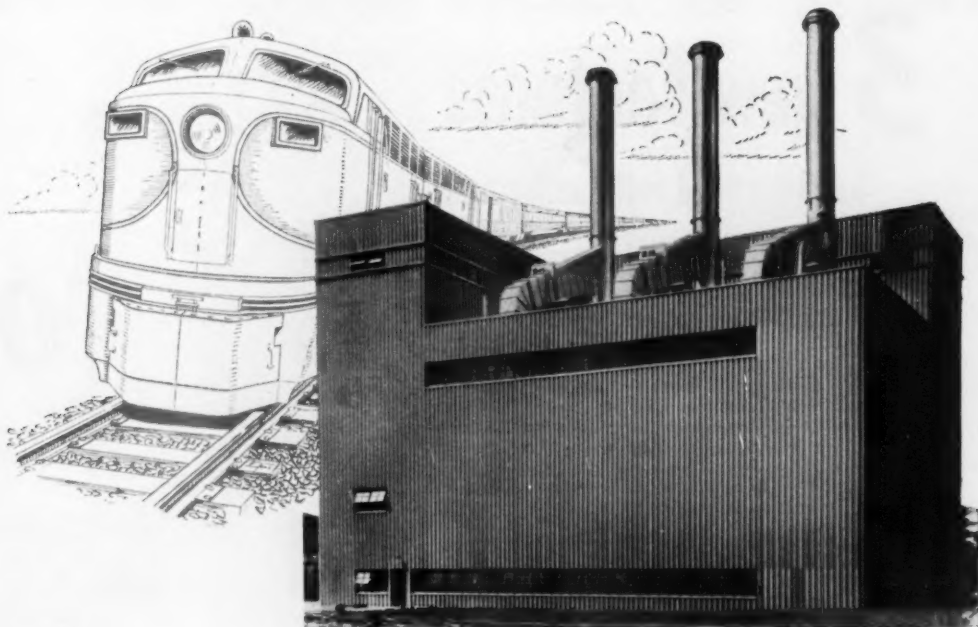
**Camachines®**

AA-298

representative: pacific coast supply company • public service building, portland 4, ore. • 260 california st., san francisco 19, cal.

July 1952

63



*Steam generating plant of Fairbanks, Morse & Co., Beloit, Wisconsin.*

## STEAM POWER TO BUILD DIESEL POWER

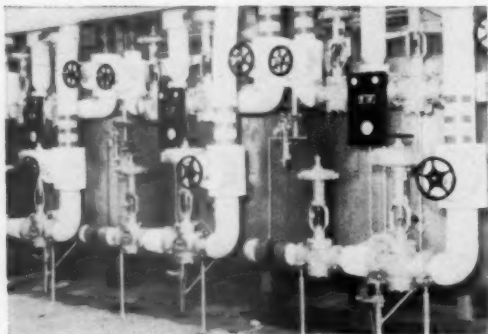
World famous diesel locomotive manufacturers, Fairbanks, Morse & Co., employed Stone & Webster Engineering Corporation to design and construct a new steam generating plant.



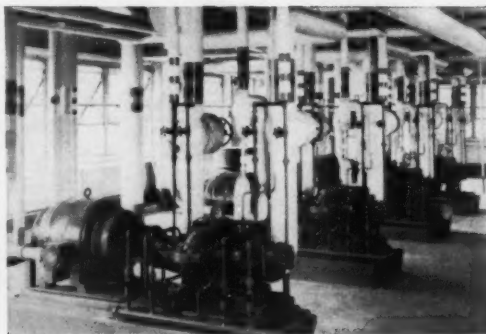
Designed for rapid changes in steam demand, up to the heaviest processing loads, the new plant yields substantial fuel savings of \$600 to \$650 per day, and provides complete continuity of service.

### STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY of STONE & WEBSTER, INC.



*Completeness of instrumentation throughout is indicated by this view of the water treatment system.*

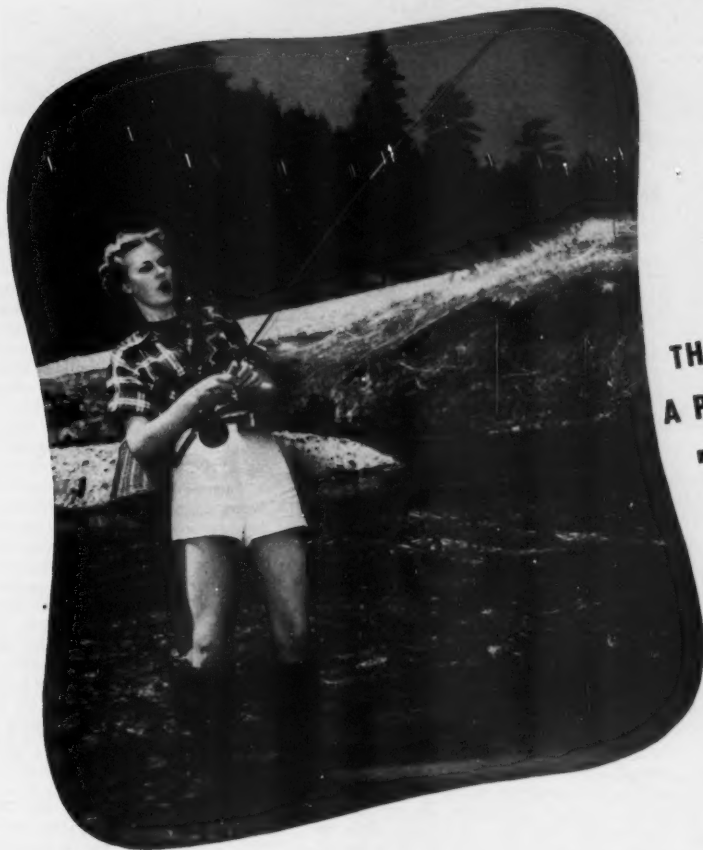


*Boiler feed pumps and facilities are of unusual capacity because of the heavy steam demand.*



# GOING FISHING

THIS VACATION?



THEN... FISH FOR  
A PRIZE IN THE BIG  
**TENAX**  
CONTEST!

While you're packing your rods, reels and lures—in pleasant anticipation of those big ones you're going to catch—be sure to tuck in several entry blanks for the Tenax Fishing Contest!

You'll want to have them handy—ready to send in your entry at once and be in line for one of the 46 valuable prizes when the contest judges make their decision in October.

It's your contest, remember—open only to employees of paper, pulp and paperboard mills anywhere in the  
July 1952

U.S.A. So, get your entry blanks at your own mill now ... and let's go fishin'!

## 46 BIG PRIZES!

### NATIONAL GRAND PRIZE

#### 10 H. P. JOHNSON OUTBOARD MOTOR

15 1st PRIZES—\$100 SAVINGS BOND

15 2nd PRIZES—\$50 SAVINGS BOND

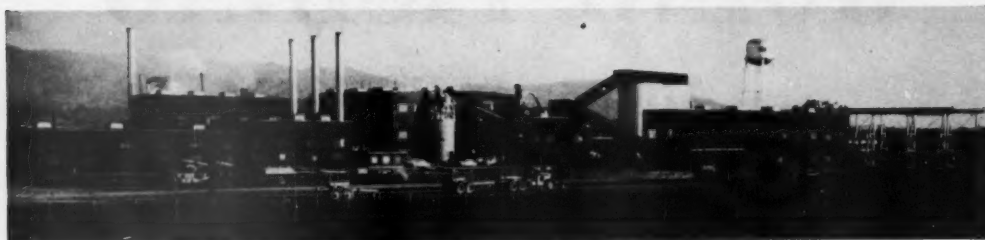
15 3rd PRIZES—\$25 SAVINGS BOND

As soon as you catch a whopper, send in your entry!

LOCKPORT FELT CO., NEWFANE, N. Y.

# MASONITE CORP. MOVES WEST

## CALIFORNIA'S SECOND WOODPULP PLANT



GENERAL VIEW OF THE MASONITE CORP.'S new plant in operation at Ukiah, Calif.

In California's rugged Mendocino county, some 115 miles north of San Francisco, at Ukiah, is one of the nation's most comprehensive forest utilization programs, running into millions of dollars in cost and set up for perpetuity. It is the great project of the Masonite Corp.

This is the great state of California's second basic woodpulp and fiber processing plant. The only one previously was the new Fiberboard Products, Inc.'s pulp and paper mill, completed in 1950 at East Antioch (see PULP & PAPER, June 1950 issue for complete exclusive illustrated article). Many years ago there was a woodpulp mill at Floriston on the Truckee near Reno, which is now a ruin.

In order to set up the newest Western forest industry, Masonite had to do three things—purchase suitable timberlands, build a road to tap these timberlands, and build a plant to process the forest products from these lands.

The corporation acquired from the Southern Pacific Co. a tract of 55,000 acres of virgin and second growth timber, consisting of about a billion feet of old growth and second growth redwood and fir. The tract lies just west of Ukiah and to get at the timber the company built a logging road 36 miles long, running from Ukiah westerly to the Navarro river, and is equal to or better than any state mountain highway.

Who uses the Masonite road? Not Masonite, for all its logging and log hauling is on a contract basis, but eight logging outfits of fairly large size and a dozen smaller log haulers and loggers, have contracts with the corporation to use the road. However, most of the logs hauled over the road come to Masonite's plant.

In old growth timber just mature and over-mature trees are taken. In second growth timber the cutting is done on a thinning basis to improve the growth of the remaining trees. The foresters visit each operation frequently and show the choppers which trees are to be cut. If the choppers don't catch on the foresters return and work with them some more.

Small logs from the slash will be taken into the Masonite plant, and much of the remainder will be worked into cordwood for the same purpose.

### Process

Cordwood, veneer cores, etc., come in by truck and rail to the breakdown plant, and are stored in the plant yard proper, from where they are moved to a long conveyor which brings the raw material into the chipper plant.

In the Masonite process of manufacturing Presdwood, lengths of wood, after having been allowed to dry for a period of time, are run through large chippers which cut them diagonally across the grain into small pieces. These are screened, the dust removed to be used as fuel, and the pieces re-chipped and re-screened. Chips then are conveyed to storage bins from which they are run into the guns to be exploded into fiber.

The guns are filled with chips. The cyclinders are then closed and steam is introduced. When the pressure has reached a certain point, the bottom valves are opened, discharging the contents—wood fiber—into "cyclones." There the steam and fibers are separated. Some of the waste steam is used to heat process water. The fiber is dropped out of the bottoms of the cyclones into stock chests where it is mixed with water and constantly agitated.

The gun operation can be varied over a wide range of conditions. Under specific conditions, the fiber produced may be used for such products as Presdwood, Duolux and plastic materials.

When the fiber leaves the guns, it contains about 50 per cent moisture and is a relatively fine fluffy mass of brownish color. A considerable portion of the wood substance is broken down into its ultimate fibers, but the rest, consisting of fiber bundles, is further refined mechanically.

The mixture of gun fiber and water from the stock chest is now pumped through refiners. Each refiner consists of a channel surfaced, conical shaped plug, rotated by an electric motor inside of a similar channeled shell. The refiners either discharge into other refiners, or to a stock chest, depending on the character of the fibers to be produced.

The material from the refiners is screened and such portions as are too coarse are rejected and returned through the refining operation. The accepted stock

is pumped to a forming machine stock chest.

From this point in the process, the problem in the manufacture of Masonite products is one of removing the water and consolidating the fiber structure through the medium of natural cementing materials in the wood itself. The mixture of fiber and water from the stock chest is pumped into the forming machine. Depending on the desired thickness and weight of the end product, larger or smaller amounts of this mixture are run out onto the machine. Quantity control is supplemented by variation of the speed of the machine.

As the mixture is run over the machine, water is gradually withdrawn, either by suction or eliminated by pressure rolls. The blanket or wet lap coming from the machine contains approximately 40 per cent fiber and 60 per cent water.

Edges of the wet lap are trimmed and it is cut into 12-ft. lengths by means of a traveling cutter. The wet lap then is discharged by means of a tippie into a stationary rack which holds 20 boards. When the rack has been filled, all the boards are transferred simultaneously into movable racks which carry them to the presses.

### Finishing the Product

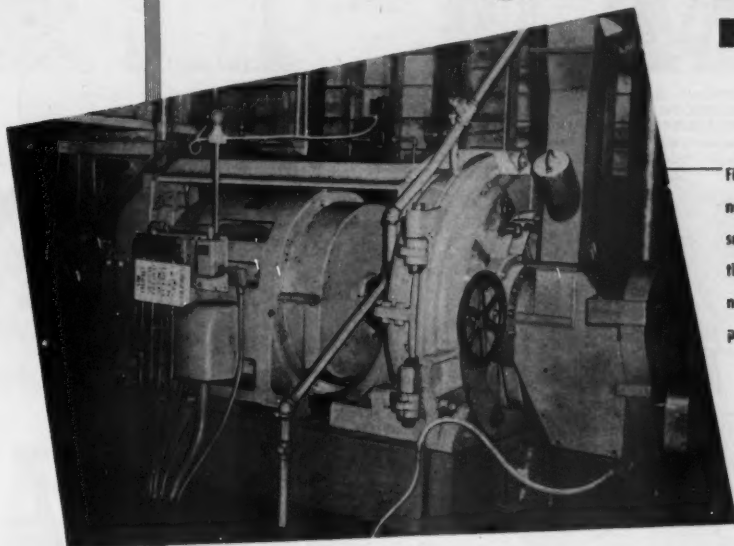
The wet laps are run into the presses by means of a galvanized wire screen. This screen gives the burlap appearance on the back of Masonite. The surface finish is obtained by pressing the material against chromium plated steel plates. Tremendous pressure is applied to each 4'x12' panel. The product is discharged from the press to the movable racks and thence to a discharge station where each board receives inspection.

The products coming from the presses are practically bone dry, and it is necessary to introduce either water as such, or water vapor, in order to bring them to a moisture content corresponding to the humidity conditions which exist throughout the country. In humidifying Presdwood, the separate boards are passed through a specially constructed humidifier.

The finishing of all Masonite products is practically identical. It consists of trimming the edges of the panels and then

*To solve refining  
problems economically—* **CORNELL uses a**

## **Sprout-Waldron Refiner**



First Sprout-Waldron unit in Cornell Paperboard Products Company semi-chemical pulp mill installation at Cornell, Wisconsin, making neutral sulphite semi-chemical pulp for cylinder board sheets.

Sprout-Waldron Refiners do an excellent job in any kind of pulping, but in semi-chemical operations they far outperform similar equipment. They do more, do it better, and at less cost.

Their unique peripheral control ring feature provides great flexibility of adjustment which enables mills to produce a wide variety of pulp characteristics. *With the Sprout-Waldron you can pinpoint exact pulp requirements.* Rugged, long-wearing plates are available in many styles. They are easily changed, and are inexpensive.

These precision engineered Refiners involve a comparatively low initial investment. Additional savings are achieved through high production rates, economy in power consumption, ease of operation and maintenance.

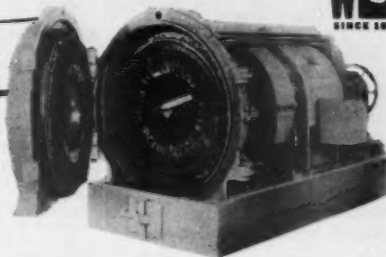
A Sprout-Waldron representative will be glad to explain how these Refiners can increase your output and save on operating costs. Write for Bulletin 41 which contains pertinent data on this equipment and how it can serve your needs. Sprout, Waldron & Co., Inc., 32 Waldron St., Muncy, Pa.

- List of Applications*
- ✓ Semi-chemical Pulping (Bleached-Unbleached)
  - ✓ Pre-Refining—High Yield hot brown stock
  - ✓ Kraft—Groundwood—Sulphite Knots & Screenings
  - ✓ Secondary Refining of Asplund Stock
  - ✓ Bleached Soda Pulp
  - ✓ Insulation Board Stock
  - ✓ Hardboard Stock
  - ✓ Flooring Felt
  - ✓ Special Applications

**The Sprout-Waldron 36-2 Refiner is**  
*the foremost producer of semi-chemical pulp today*

**Sprout-Waldron**  
*Manufacturing Engineers*

MUNCY • PENNSYLVANIA





OFFICIALS OF THE MASONITE CORP., Ukiah, California, Operation, left to right: S. H. MILHOLLAND, Office Manager; W. A. COTTON, Asst. General Manager; E. T. F. WOHLBERG, Vice President and General Manager; EWART "SAM" PARNUM, Forest Engineer; ROY WAGNER, Forest Manager; H. B. CARLSON, Personnel Manager; WALKER TILLEY, Chief Forester; and FRANK LESNIAK, Chief Engineer for all Masonite operations.



LEFT TO RIGHT: ED HINDE, Plant Engineer; HAROLD HENDERSON, Purchasing Agent; N. T. WIDMANN, Production Superintendent; R. W. MILLER, Process Control Supervisor; JAMES B. CURTIS, Mechanical Foreman; A. S. COSKEY, Steam and Disposal Plant Supt.; HARRY STRICKLER, Breakdown Plant Supt.; C. H. GORDON DIXON, Warehouse and Shipping Superintendent.

cutting them into pre-determined sizes. To produce Tempered Presdwood, the Standard Presdwood is treated with various oils, baked at high temperature and then humidified.

#### The Personnel

Eugene Holland is president of Masonite Corp., and John M. Coates, vice president. They make headquarters in Chicago.

E. T. F. Wohlberg is vice president and general manager of the Ukiah operations.

Chief engineer of all Masonite activities, and project manager for Ukiah, is Frank G. Lesniak, who has been with the company 25 years. He built Masonite plants in Sweden in 1929, Italy in 1937, Canada in 1938, Australia in 1939, and South Africa in 1947.

W. A. Cotton, assistant general manager for the Ukiah Masonite plant, has been with the company 24 years.

N. T. Widmann is production superintendent at Ukiah. He was formerly with Rayonier Inc., and Puget Sound Pulp & Paper Co.

Stanley H. Milholland is office manager; Barney Carlson, industrial relations manager; and Harold Henderson, formerly with Pioneer Rubber Co., is purchasing agent.

R. W. Miller is process control supervisor. He was formerly with Simpson Logging Co., Fibreboard Division, research laboratory, Shelton, Wash.

Harry Strickler is breakdown plant superintendent.

C. H. Gordon Dixon is finishing, refining, warehouse and shipping superintendent. Ed Hinde is plant engineer. Before coming to Ukiah he was with the pulp division, Weyerhaeuser Timber Co.,

Longview, Wash. His assistant is Gordon Shaw, formerly with H. R. MacMillan, Ltd., Vancouver, B. C.

#### Machinery and Equipment

Among suppliers of machinery and equipment used in the new Masonite hardboard plant are the following:

Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa.

The Black-Clawson Co., Hamilton, Ohio

The Bristol Company, Waterbury, Conn.

Minneapolis-Honeywell Regulator Co., Ind. Div., Philadelphia 44, Pa.

Byron Jackson Co., Los Angeles 54, Calif.

Clark & Vicario Co., Bronxville 8, N.Y.

Combustion Engineering Co., New York, N.Y.

Cochrane Corp., Philadelphia 32, Pa.

Consolidated Western Steel Corp., San Francisco, Calif.

The Dorr Co., Stamford, Conn.

DeZurik Shower Co., Sartell, Minn.

Downingtown Mfg. Co., Downingtown, Pa.

The Foxboro Co., Atlanta, Ga.

Fairbanks-Morse & Co., Chicago 5, Ill.

The Falk Corp., Milwaukee, Wis.

Filer & Stowell Co., Milwaukee, Wis.

General Electric Supply Co., San Francisco 3, Calif.

Harnischfeger Corp., Milwaukee 14, Wis.

Improved Paper Machinery Co., Nashua, N.H.

Ingersoll-Rand Co., New York, N.Y.

Johns-Manville Corp., San Francisco 5, Calif.

Link-Belt Co., Chicago, Ill.

Lukenweld, Inc., Div. of Lukens Steel Co., Coatesville, Pa.

D. J. Murray Mfg. Co., Wausau, Wis.

Oliver Filters, Inc., New York 18, N.Y.

J. O. Ross Engineering Co., New York, N.Y.

Reliance Electric & Engineering Co., Cleveland, Ohio.

Sumner Iron Works, Everett, Wash.

Sprout-Waldron & Co., Muncy, Pa.

Stebbins Engineering Co., Seattle, Wash.

Columbia Steel Co., San Francisco, Calif.

Vickers, Inc., Detroit 32, Mich.

Bethlehem Pacific Steel Corp., San Francisco, Calif.

Laurel Machine & Foundry Co., Laurel, Miss.

Westinghouse Electric Corp., Pittsburgh 30, Pennsylvania.

## Personals

**SUPERINTENDENTS** on the Coast, in planning their program for the TriWay meeting in Victoria, B.C., Sept. 25-27 have appointed these temporary committee chairmen: Kraft pulping, **HUGO TRYGG**, Weyerhaeuser, Springfield, Ore.; Sulfite pulping, **JACK SAVAGE**, Crown Z, Camas; finishing, **CECIL KNAPP**, Crown Z, Camas, and papermaking, **CHARLES E. ACKLEY**, Crown Z, West Linn, Ore.

**H. A. "GOB" DesMARAIS**, new general sales manager of Penn Salt Mfg. Co. of Washington, as announced last month here, made his first tour of the mills in his new capacity in May—not his first tour, however, by many years—with **LE-ROY SHANAMAN**, manager of the Portland, Ore., plant and sales. Mr. DesMaraiss returned to Tacoma in mid-June from Palo Alto, Calif., with his wife and two daughters, to move into their new home there, after attending daughter Marianne's graduation at Scripps College in California. Next fall she goes east to Radcliffe College in Cambridge, Mass., for graduate work, and their daughter, Constance, returns to the University of Arizona for sophomore year.

**PALMER W. GRIFFITH**, West Coast technical sales director of American Cyanamid Co., received the eleventh annual John Wesley Hyatt Award "for achievement of wide importance to the plastics industry" at a banquet at the Hotel Pierre in New York.



# CLEAN PAPER GETS THE PRICE

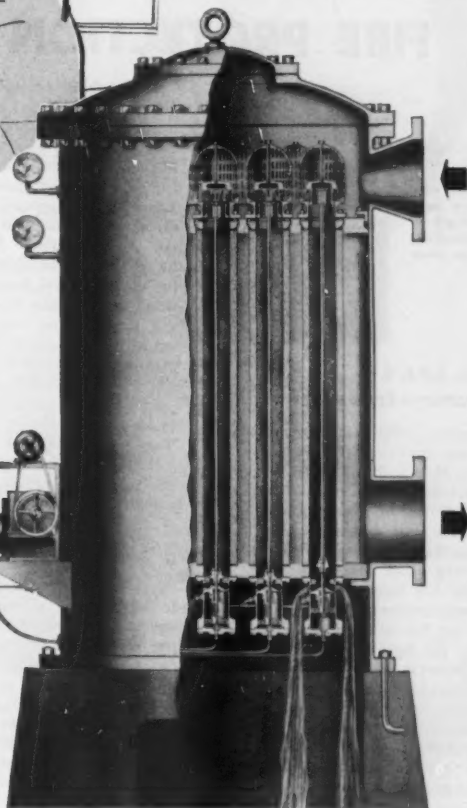


## ADAMS WATER FILTRATION GETS THE DIRT

In kraft or tissue, book or newsprint—water quality is as critical as chip quality. No matter what grade of pulp or paper you make, sand, grit and pipe scale are expensive when they keep your product out of the top price brackets.

Water filtration with the fully automatic Adams Poro-Screen or Poro-Stone Filter takes out price-lowering impurities *before* they become part of the stock. Continuous backwashing effectively prevents clogging of filter elements—avoids costly, cumbersome cleaning operations.

Remember—in its early stages your product is



about 98% water, and most water-borne impurities stay with the stock.

Find out what Adams filtration has done in situations like yours. Write for the new 20 page booklet on water filtration in the Pulp and Paper Industry, Bulletin No. 691.

**R. P. ADAMS COMPANY, INC.**

**210 EAST PARK DRIVE, BUFFALO 17, N. Y.**

July 1952

69



"Through research in the next 10 years, more money is to be **MADE** or **SAVED** in pulpwood operations of North America than has been made or saved in pulp and paper manufacture in the last 25 years."—**DR. LINCOLN R. THIESMEYER**, *President of Pulp & Paper Research Institute, Montreal.*

## FIRE PROTECTION IN LAKE STATES

**W. S. BROMLEY**, new Exec. Secretary and Treasurer of American Pulpwood Association, headquarters in New York.



### Bromley Is APA's New Secretary-Treasurer

W. S. Bromley, who has been acting secretary of the American Pulpwood Association since May 1, assumed full duties and responsibilities as executive secretary and treasurer of the organization July 1. He takes over duties relinquished by H. E. Brinkerhoff whose retirement became effective as of that date.

Mr. Bromley has been with APA since 1949 as a forest engineer and specifically in charge of the Association's mechanization program. He has been chairman of the Eastern Division, National Forest Industries Communications in handling industrial radio policies for the past three years, and is currently secretary of the Chemical Debarking Research Project, a special study being financed by 13 pulp and paper companies.

A full background of training and experience in forestry and woods work is brought by Mr. Bromley to his new work. He received forestry training at Pennsylvania State College and Yale University, and between times served as a ranger and civilian conservation corps superintendent with the Ohio division of forestry, and as an assistant forester with the U.S. Forest Service.

In 1939 he joined the faculty of the Uni-

versity of Michigan to work on research in logging and utilization of land and timber in northern Michigan, and then during World War II served as a forester for the Cleveland Cliffs Iron Co. This involved conversion of more than 12 logging operators to improved forestry practices in cutting close to 50 million board feet of forest products annually, and required protection and administration of field activities on more than 400,000 acres of private forest land in northern Michigan.

Later he served as a consulting forester, a pulpwood producer, and a director of the Timber Producers Association of Michigan and Wisconsin. He is a senior member of the Society of American Foresters, and makes his home with his wife and seven children in New Rochelle, N.Y.

tion included recordings for radio broadcast, comic books and outdoor display signs. Because many fires are of local origin, it was suggested that local campaigns should be used to supplement the more general campaigns of AFPI and CFFP.

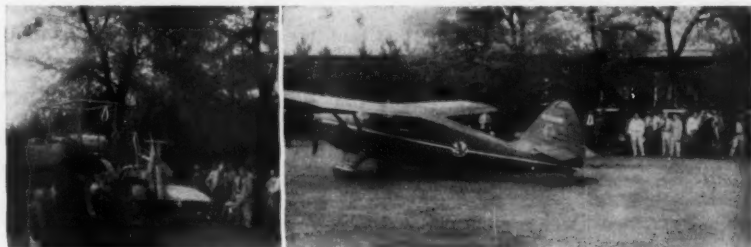
In view of figures indicating that 25% of all forest fires are caused by debris burning, a map indicating areas of "above average incidence" should be available to permit concentration of forces to control debris burning in those areas, Mr. Allman felt. Other maps should be made available to indicate fire from other causes, and thus make possible a complete picture of the area to be protected. Quite often people do not clearly understand the function of burning permits. This matter could be cleared by mailing the information directly to selected areas, or through special articles placed in rural papers, it was felt.

M. P. Burg, of National Container Corp., and F. F. Fixmer, of Mosinee Paper Co., said that their companies' educational material to employees on fire prevention was felt to be important in training the whole family—not just the worker.

### Pre-Suppression Activities

Clarence Prout, of the Minnesota Division of Forestry, said the outcome of pre-suppression activities hinged upon the firm realization by the citizens of a state as to the dollar value of the woods products derived from the forest areas each year. Once realized, then a program for Pre-Suppression could be based on (1) An inspection system to keep personnel, equipment and plans of operation continually in readiness; (2) A training program of "mock" maneuvers so that fire fighters could learn by doing; (3) A safety program aimed at reducing losses

**MOBILE EQUIPMENT FOR FIRE FIGHTING** was displayed at Lake States Technical Committee meeting of APA, in Tomahawk, Wis., May 21 and 22. At left, a two-ton truck equipped with tanks and pumper pulling a TD-6 tractor and a Wisconsin tire plow on a "Till Pad" trailer. The tractor was equipped with a 150 gallon water tank. At right, a small plane was used to show communication which could be maintained between spotting plane in air over fire area and equipment and men with portable back-pack radios on ground.

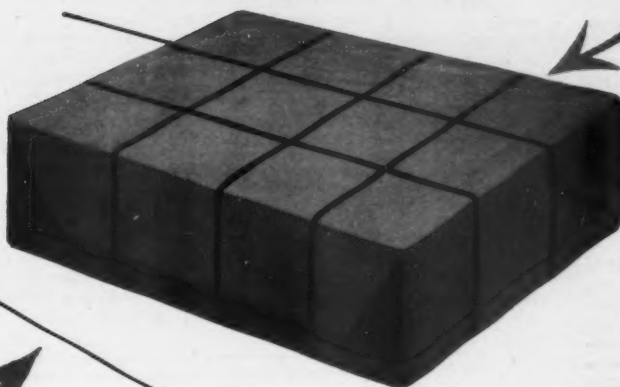


# Lyddon & Co.

exporters of wood pulp  
to all world markets

# Parsons & Whittemore

paper exporters  
wood pulp



London  
Paris Zurich  
Stockholm Oslo  
Sousse Montreal  
Buenos Aires Sao Paulo

10 East 40th Street, New York 16, N. Y.





AT LEFT—GROUP AT ST. REGIS WOODLANDS SCHOOL receiving instructions on chain saw operation from V. W. Proctor, Jr., of Lombard Saw Co. Other group leaders included: E. L. Stantial, McCullough Chain Saw Co.; Al Orcutt, Disston Saw Co.; Bob Blackstone, Mall Tool Co.; M. G. Lemoine and Marshall Gould, Homelite Co.; and I. E. Carter, Lombard Saw Co.



AT RIGHT—74 PERSONS REPRESENTING SIX PULP AND PAPER COMPANIES with Maine operations, and interested equipment and service firms attended American Pulpwood Assn. school on safety and training on chain saws and foreman training at St. Regis Paper Co., Bucksport, Me. At extreme left, seated, is Floyd Crocker, Woodlands Manager of St. Regis, who was host to the school, and at left, front row, is H. H. Jefferson, APA Training Officer.

of manpower by accident in fire fighting; and (4) Fire planning to provide men and equipment for fighting.

The effectiveness of work of individual companies was indicated by Lester Pollard and F. T. Frederickson, of Minnesota and Ontario Paper Co., who said that a "No Burning Pledge" movement carried on by their local 4-H Club children had without a doubt resulted in fewer fires. M&O has dovetailed its fire fighting system with that of the State, and to insure adequate training of its men has requested that the State call out the group, not only on large fires, but on small ones as well.

#### Developments in Fire Control

Speaking on the developments in fire control and progress made by forest land owners and timber processors, M. M. Bergman, of the Michigan Department of Conservation, told the group that one recent key made in overall fire control success is the development and extended use of radio communication. With radio communication from time of detection of a fire by lookout or airplane to direction of control forces the entire procedure has been quickened, he said. "Radio equipped transports can spot these control units at strategic points, and they start line building while fires are still small and usually have a fire suppressed in less time than the time required to simply assemble a sufficiently strong manpower crew," he said. The high mobility of these radio-controlled mechanized units make it possible in a short time to draw from a wide area and concentrate on a dangerous situation the numbers of these powerful forces the situation may demand. The total cost of such mechanized suppression is about  $\frac{1}{4}$  that of hand tool suppression, studies show, and the loss is 80% less.

Access roads provide the most important and effective fire protection of all, said W. E. McCraw, Caterpillar Tractor Co. Mr. McCraw pointed out that (1) Roads segregate a large area into small blocks; (2) Without roads, rapid contact with the fire is impossible; and (3) Less effort is expended getting to the fire where the effort is needed most.

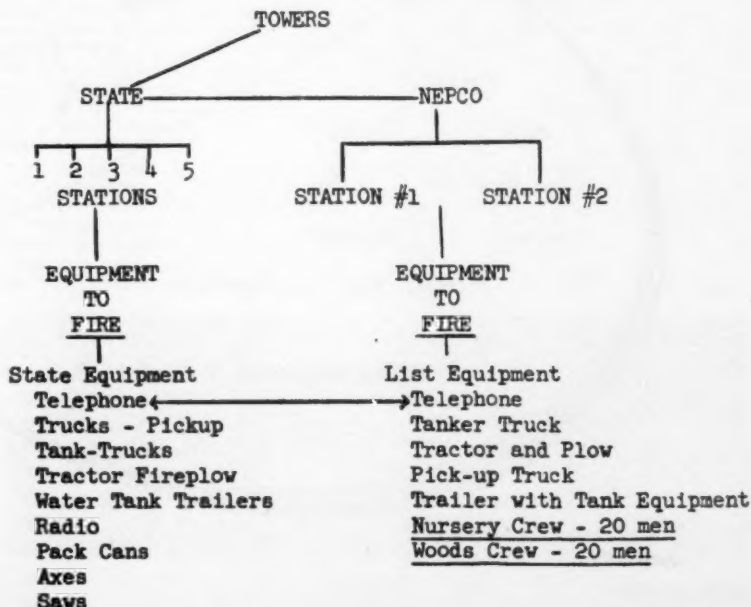
#### Recommended Fire Plan

George Kelp, Nekoosa-Edwards Paper Co., presented a history of Nekoosa-

Edwards forest fire protection organization from its birth in 1926 to the present day. Within that time fire protection has reduced fires in Central Wisconsin to 2.72 acres burned per fire with a total of 6.24 acres burned per year. For Oneida county these figures are 2.53 acres per fire, or 9.6 acres per year.

Cooperation by Nekoosa-Edwards with public agencies is very close, Mr. Kelp said. This was strengthened by a "Memorandum of Understanding" made with the Wisconsin Conservation Department,

THIS DIAGRAM SHOWS ORGANIZATION of Nekoosa-Edwards Paper Co. Woods Fire Organization Plan. All Nepco foresters are emergency fire wardens and are empowered to hire pick up crews and equipment when needed. Their activities during a fire parallel the regular State Fire Rangers and their territory covers the areas of the company holdings. State Ranger Stations shown are: 1. Friendship; 2. Nekoosa; 3. Babcock; 4. Mecedah; and 5. Wisconsin Dells. Nepco Ranger Stations are: 1. Nursery Headquarters, and 2. Central Station.



and which is renewed each year. This agreement clearly states the obligations of each party under various fire hazard conditions.

Shown with this report is an outline of the Nekoosa-Edwards fire organization plan.

At the business session, the Lake States Technical Committee of APA welcomed the following as new members: Ward Smith, Rhinelander Paper Co.; H. J. Gardner, American Excelsior Corp.; and Frank Fixmer, Mosinee Paper Mills.

#### "Memorandum of Understanding"

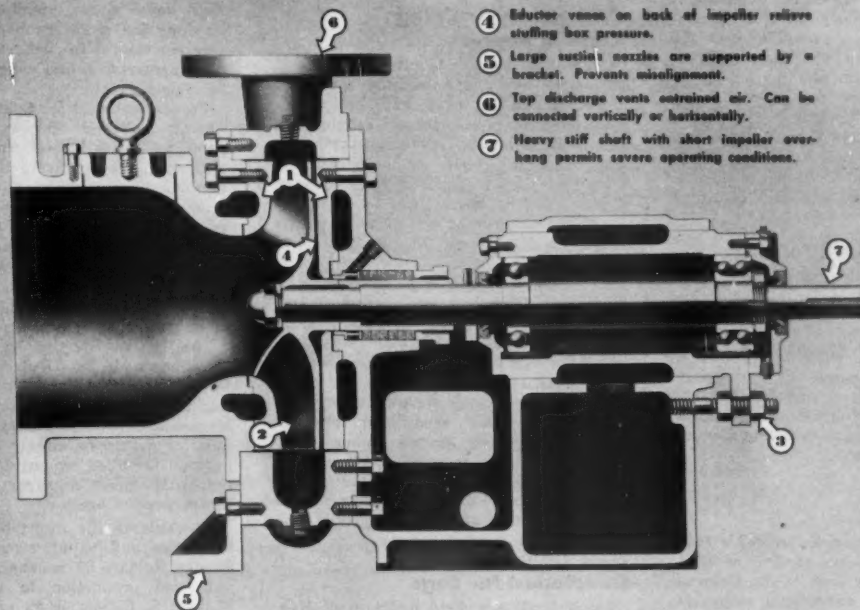
This is a digest of the "Memorandum of Understanding" for cooperation between Nekoosa-Edwards and the Wisconsin Conservation Department.

1. Wisconsin Conservation Department to maintain specified telephone lines to extent that minor repairs are made. This



## Simplicity, long life, easy maintenance

SIZES 4" TO 10"  
CAPACITIES 150 GPM TO 5,000 GPM  
HEADS 20' TO 130'  
SPEEDS 1,150 RPM FOR MOST SERVICES  
REQUIRING CONTINUOUS OPERATION



- ① Both suction and discharge side of impeller have renewable liners.
- ② Mixed flow type impeller has a rising head characteristic which exerts a self-cleaning action.
- ③ Rotor can be adjusted with external adjusting screw to compensate for wear.
- ④ Eductor vanes on back of impeller relieve stuffing box pressure.
- ⑤ Large suction nozzles are supported by a bracket. Prevents misalignment.
- ⑥ Top discharge vents entrained air. Can be connected vertically or horizontally.
- ⑦ Heavy stiff shaft with short impeller overhang permits severe operating conditions.

*You get them all with...*

**DE LAVAL**  
STOCK PUMPS

Look at the seven outstanding features shown in the cross-section and you'll see why De Laval type CS Stock Pumps stay on the job for years . . . trim maintenance costs. Stock flows freely through a large suction nozzle, an exceptionally large throat area and an unbroken streamlined volute. This minimizes clogging, contrib-

utes to high hydraulic efficiencies, lowers inlet velocities, permits the handling of high stock densities with low submergences and prevents de-watering of free stock.

Write today for Bulletin 1100 giving full application and specification data.



*Stock Pumps*

DE LAVAL STEAM TURBINE COMPANY  
Trenton 2, New Jersey

DL-149

July 1952

73

pertains to telephone lines loaned by Nepco.

2. Agreement between department and Nepco regarding manning of a certain fire tower whereby Nepco will arrange for that man.

3. Wisconsin Conservation Department will notify Nepco nursery office by telephone of any fire located on Nepco property or within one mile thereof.

4. Nepco to keep department posted where someone will be available to answer fire calls at nursery, otherwise persons to be responsible with their address of location is to be given the department.

5. Equipment and men at Nekoosa Radio Station shall be available upon the request of Nekoosa district ranger or conservation department.

6. Exchange between parties of maps, organization range lists, fire plan charts.

7. Nepco fire fighting equipment and personnel available upon mutual agreement but in no case to be withdrawn in event fire hazard is high and company holdings are unprotected.

8. The department recognizes its duties in protecting all territory within its protection districts, and at same time confirms that Nepco has a great interest involved in its own holdings and areas adjacent.

9. The department agrees on removal of a ranger at Nekoosa for emergency work outside of his designated district. He will be replaced by suitable substitute during fire season and notification made to Nepco office.

### **Crown Z Seeds 4,336 Acres**

Completion of Crown Zellerbach's seasonal planting and aerial seeding of 4,336 acres of logged-over land in the Columbia river area was announced today by Chief Forester Clarence Richen, Portland, Ore. Aerial seeding from helicopters covered 520 acres on the Cathlamet, Wash., tree farm and 700 acres of the Columbia County tree farm at Vernonia, Ore. Some 827,000 seedlings were planted on five Oregon tree farms, and 225,000 Port Orford Cedar seedlings were given away by the company to fill about 6,000 requests. A new experiment in offering pulp species seedlings to woodlot owners was a success. Packed in bundles of 200 and offered at cost (\$1 a bundle), 85,000 seedlings were purchased by landowners near company paper mills.

### **Richard E. McArdle Is U.S. Chief Forester**

Richard E. McArdle is new chief of the Forest Service, U. S. Department of Agriculture. He succeeds Lyle F. Watts, chief forester for the past nine years, who retired from active duty June 30.

Mr. Watts' retirement from active duty as chief of the Forest Service will mark the completion of a public career service of nearly 40 years. He has headed the Federal forestry agency since 1943.

A career government forester, Mr. McArdle has been a member of the Forest Service for more than 25 years. Since 1944 he has served as assistant chief in charge of cooperative forestry programs.

H. H. JEFFERSON, Safety and Training Officer for American Pulpwood Assn. His schools in the Northeast are annual affairs—well-attended.



### **APA Safety Training Class in Maine**

April was a busy month for Harry H. Jefferson, safety and training officer for the American Pulpwood Assn. and woodlands men of the Northeast. During that month he supplied APA cooperation for five different schools in the Northeast, beginning with a school at S. D. Warren Co. at Westport, Me., on April 4, and concluding with training classes at St. Regis Paper Co., Bucksport, Me., April 24 and 25.

The four other meetings were at S. D. Warren Co., Bingham, Me., April 12 and 13; International Paper Co., Fort Kent, Me., April 17 and 18; and Brown Co., Berlin, N. H., April 7 and at Millsfield Camp, N. H., April 14.

Most of the schools were on safety and training on chain saws, and foreman training for woods' groups. Other companies than those mentioned whose men participated in the schools included: Great Northern Paper Co.; Eastern Corp.; Diamond Match Co.; and the Dead River Co.

### **New Deep Sea Raft Developed for Logs**

Lloyd B. Evans, field assistant of Rae Johnson, woods manager, Columbia Cellulose Co., Prince Rupert, B.C., has developed a new type of log raft which has been successfully tried out in unprotected sea on the west coast.

"Purpose of the raft is to permit the bundling of logs in shallow water where it would be impossible to construct other types of deepsea rafts," Mr. Evans told PULP & PAPER.

The Evans raft is built to transport about 500,000 feet of logs. The logs are first bundled, about 4 to 6 thousand feet to the bundle, in such a manner that the logs in each one will be of about the same length for the stowing in tiers for the boom.

Bundles from 4 to 6 thousand feet can be stowed 7 wide within a 66 foot boom stick. The raft can be made as long as desired, but it has proved practical to build on a 7-section basis or about 500,000 feet per raft. The head sticks should be no less than 22 inch top diameter, with side sticks approximately the same.

Marine insurance writers have passed the coupling straps on a basis of two to each joint. In each bundle there are  $\frac{3}{4}$  inch binding straps. On each tier of bundles there are two weaving straps, which are placed alternately on top and under the bundle in the tiers and secured with clamps.

### **Southern Forestry Reports Are Available**

Results from recent studies conducted by the U. S. Forest Service in the Southern area both through the Southeastern Forest Experiment Station at Asheville, N.C., and the Southern Forest Experiment Station at New Orleans are summarized in readable form for both industry in production and industrial forest owners and managers. These include:

Forest Research in the Southeast, by E. L. Demmon, listed as Station Paper No. 13. Items included here: developing high naval stores, yielding strains, such as done for crude rubber; loblolly pine reproduction; fire behavior and tolerances; watershed and water protection as involving forest.

Forest Statistics for Southwest Georgia (1951), a Forest Survey Release prepared by James F. McCormack. Listed as #37, it should be invaluable to that portion of paper, lumber or other forest products industries having an interest in that section or any part of Georgia within competitive distances. The 22 counties covered have 5.6 million acres of which 54 percent is actual forest, an increase of 1.2 percent since the last survey. Small pole, timber etc. sizes increased 75%.

The Timber Supply Outlook in South Carolina, a U. S. Dept. of Agriculture Forest Resources Report #3. This report, and Forest Resource Report #4 covering Mississippi's Forest Resources and Industries should be closely examined and indexed for filing by any industrialist, or industrial forest manager interested in the respective areas.

Of value to the forest owning lumber industries and paper companies, Forest Survey Release 69, a compilation of 1950 pulpwood production in the South by William S. Stover, is an excellent document. This report furnishes production by counties both for pine and hardwood. It was prepared from statistics gathered by the Asheville and New Orleans stations.

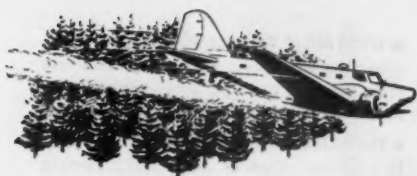
All of the above reports are available on request.

### **Southern Pulpwood Group Meetings**

Emphasis on restocking of forest lands featured the 1952 series of summer field meetings held by the Southern Pulpwood Conservation Association at Alexandria, La., Bogalusa, La., Myrtle Beach, S.C., and Asheville, N.C.

Each meeting provided session talks by leaders in forest conservation, and a field demonstration trip to examine well established forests or plantations.

The Association, under management of H. J. Malsberger as "forester" and outstanding directors of paper mill forest woodlands, has substituted these four district meetings for a single session. As a result, a larger proportion of forest owning paper mill woodlands staffs have been able to participate, and the program has been laid before a great number of pulpwood contractors heretofore unable to leave their personally conducted enterprises to participate in distant sessions.



**Over a million acres  
have been saved... but another  
million will look like this...**

**if  
the job  
isn't  
finished!**



Timber is one of our country's most important crops. And like other crops, it must be protected from the ravages of insects. Tree farmers in the Northwest know this... and they know that insects and disease actually do 30% more damage to their tree farms than forest fires do!

That's why Northwest timber owners recently launched a large-scale program to check the infestations of the spruce budworm. Using airplanes and a low-cost, Pennsalt-produced insecticide, they have successfully rescued some 45 billion board feet of lumber that would otherwise have

been doomed. Value of the timber: about \$785 per acre. Cost of the spraying program: little more than one dollar per acre!

No doubt, similar methods could prove equally effective in ridding other forests of insects and disease. Pennsalt technicians will continue to offer their assistance on this problem from coast to coast.

*In the West: Pennsylvania Salt Manufacturing Company of Washington, Tacoma, Wash. and Portland, Ore.*

*In the East: Pennsylvania Salt Manufacturing Company, Philadelphia 7, Pa.*

**Timber is a crop... let's protect it**

**PRODUCERS OF**

Liquid Chlorine • Caustic Soda • Bleaching Powder • Potassium Chlorate • Sodium Chlorate • Anhydrous Ammonia • Perchloran® • Sodium Arsenite • Sodium Hypochlorite • Muriatic Acid • Sulphuric Acid • Anhydrous Hydrofluoric Acid • Acid-Proof Cement • DDT • Penco Forest Spray

**PENNSALT  
CHEMICALS**

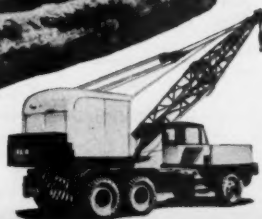
for Industry • Agriculture • Health • Home

**MORE PULPWOOD  
LESS MAN HOURS**  
with the **NEW** big-producing  
**50 "SERIES" LORAIN CRANES**

For bigger bites of pulpwood... bigger lifts per load... more cords from block pile to the mill... get the Lorain-50 "Series" Crane story. It's a story about high production to match today's big demands. It's a story about a labor-saving, one-man operated crane that does the work of a crew of men on the block pile. It's the story about the big, new Lorain-50 "Series" Cranes with money-saving features (above) worth checking with your nearest Thew-Lorain Distributor!

THE THEW SHOVEL CO.  
LORAIN, OHIO

Wood Mosaic, Ltd., Woodstock, Ontario handles big logs with a Lorain 50-K Crane, mounted on a crawler 14 ft. long. 3 other crawlers available.



● **HYDRAULIC COUPLING—STANDARD...** gives the smoothest crane operation—no jolts, bounces or jerks; acts as "shock absorber" for turntable mechanism and cables.

● **THROTTLE CONTROL OF LOADS** (applies to gasoline powered machines)...smooth acceleration for raising or lowering loads; a wider range of raising and lowering speeds; pin-point load spotting.

● **CENTER DRIVE TURNTABLE...** efficient direct-to-the-point power application to hoist, swing or travel shafts.

● **NEW AIR CONTROLS...** air power crawler steering and air control of tread lock from operator's position in cab.



**RUBBER-TIRE  
MOTO-CRANES**  
for high-speed mobility

25-ton capacity Lorain-50 "Series" Moto-Cranes are also available—with same basic features as crawler models, mounted on specially designed and built carrier—rugged, strong; 3 axle type, 4 or 6-wheel drive. Other Lorain Pulpwood Cranes from 6 to 45-tons. Ask about them.

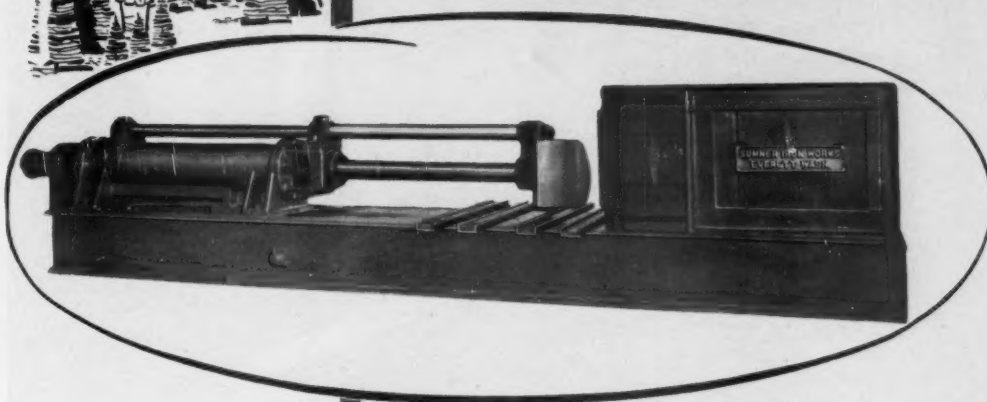
THEW **LORAIN**®

CRANES  
for  
PULPWOOD  
HANDLING





## THE AXE *with the* **BUNYAN PUNCH!**



## SUMNER'S *steam* **AXE SPLITTER**

**For rapid breakdown** of your logs to a size suitable for chipping or grinding, the SUMNER Steam-Axe-Splitter operates with a force and competence Paul Bunyan might well have envied.

The Splitter customarily is built with a 54" stroke for 48" long wood, but can be constructed to accommodate greater or lesser log lengths. The business end of the Splitter is a heavy single-bit cast steel axe with guide rods and two babbitted guide bearings.

The anvil is of heavy cast steel, cushioned against a wood bulkhead set against a sand-filled box. The entire assembly is mounted on a heavy structural steel frame, making the unit self-contained.

As with all SUMNER equipment, the Steam Splitter incorporates simplicity and sturdiness with proven operating reliability. We invite you to send for details on our complete line of pulp, paper and board mill machinery.

Designers and  
Builders of  
Pulp and Paper  
Mill, Sawmill,  
Boardmill and  
Shingle Mill  
Equipment

ESTABLISHED 1892

# SUMNER IRON WORKS

EVERETT, WASHINGTON



LODDING  
DOCTORS

★ ★ Under the waterfall—  
Lodding Doctor.

Precision that avoids premature  
wire changes. First on the  
machine. First in performance.

**LODDING ENGINEERING CORPORATION**

WORCESTER, MASSACHUSETTS

REPRESENTED BY

W. E. GREENE CORPORATION • WOOLWORTH BLDG., NEW YORK

## News and Notes from

# EQUIPMENT AND SUPPLY COMPANIES

### Equipment Page

**GENERAL AMERICAN TRANSPORTATION CORP.** has issued a new brochure on "Filters" made by its Process Equipment Division. They offer a line of Conkey rotary vacuum and other types of filters, all liberally illustrated in the booklet with drawings, pictures and details. Write for "Filters" brochure to Filter Sales Office, Process Equipment Div., GATX, 10 East 49th, New York 17.

**DOW CHEMICAL CO.** announces Dr. R. H. Boundy, manager of the plastics department since 1945, has been named to head the company's research activities. The announcement was made by Dow president Leland I. Doan who also said C. B. Branch, present manager of the company's technical service and development department, would replace Dr. Boundy as manager of the plastics department.

**THE RELIANCE ELECTRIC & ENGINEERING CO.,** Cleveland, O., has issued a report on how its "packaged" type, all-electric adjustable-speed drive system for A-c. circuits has found wide application in a diverse range of production operations and manufacturing processes throughout major industries. Entirely self-contained and factory-wired, this method of making adjustable speed drives readily available also incorporates a number of design refinements and operational improvements which further extend its usefulness.

**FULLER CO.,** Catasauqua, Pa., offers on request its latest Bulletin G-1, "4 Basic Types of Conveying Systems Built by Fuller."

**F. C. HUYCK & SONS** has registered a new issue of \$3,000,000 convertible prior preferred stock, proceeds from the sale of which will be used to redeem the company's Class B preferred stock and to provide working capital now being obtained through short-term bank loans. The company has recently purchased Gay Brothers Co., Cavendish, Vt.; The Joseph Noone's Sons Co., Peterborough, N.H.; and Wm. R. Noone & Co., Boston, Mass. **THE RICE BARTON CORP.** held the annual dinner meeting of its 1837 Club in Worcester, Mass., June 4, with George Sumner Barton, board chairman, passing out gold watches to five 30-year employees, and other awards to 20- and 10-year veterans.

**GENERAL DYESTUFF CORP.** has announced election of S. H. Williams as a vice president. Mr. Williams has been manager of the company's Charlotte, N. C., offices for the past 10 years. He is being succeeded in Charlotte by C. C. Cayce.

**NEPTUNE METER CO.,** New York City, has introduced an Auto-Stop meter that is said to accurately and automatically control quantities of industrial liquids fed into processes or batching operations for



more than 100 industrial liquids. Liquids that can be handled include cold, warm and hot water, oils, soap solutions and other common industrial liquids and chemical solutions. Details may be obtained from Neptune Meter Co., 50 West 50th St., New York 20, N. Y.

**HOOKE ELECTROCHEMICAL CO.,** Niagara Falls, N. Y. has named Herbert K. Holden as salesman in the Niagara sales territory, and the addition of Dr. Eugene T. Miller and Alfred W. Toon to its engineering department.

**NOPCO CHEMICAL CO.** awarded gold watches to 13 of its 25-year employees in a recent ceremony at Harrison, N.J., and gold service emblems to 16 members of its 15-year Club. Awards were presented by Charles P. Gulick, chairman of the board.

**DILTS MACHINE** Division of Black-Clawson supplied a special Dilts 80" adhesive applicator now operating in conjunction with a new laminator at Owens Corning Fibreglas Company, Newark, O. The applicator is of kiss type design with open construction to provide for ease of control, threading and clean-up. In this machine foil or Saran webs are joined to various Owens Corning "Fibreglas" products with water soluble adhesives.

**BABCOCK & WILCOX CO.,** nation's largest producer of steam generators and related equipment, opened offices May 12 at new headquarters in the recently completed 32-story Chrysler Building East at 161 East 42nd St., New York, following one of the largest moves from the financial district in many years. Movers estimated 220 truckloads transferred the company's thousands of desks, files, office machines and library records from 85 Liberty St. The company had its office in the downtown district of New York more than three quarters of a century.

**LOU KESSLER,** vice president and general manager of Owens-Corning Fibreglas Co., Santa Clara, Calif. was in Seattle accompanied by general sales manager WM.

**WINTERHALTER** to play co-host with Seattle branch manager JIM SAYER and FESCO's general manager W. E. MURSEY of Portland, Ore., at open house there.

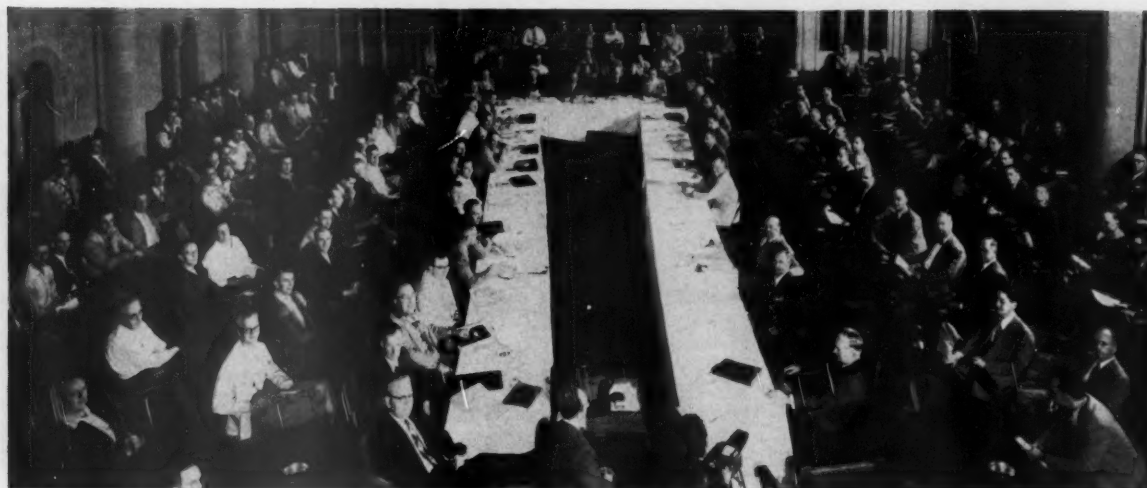
**STOWE-WOODWARD** held its Annual Sales Conference at the Brae Burn Country Club in Newton Upper Falls, Mass. Then these rubber roll specialists banqueted at Boston's Hotel Statler. Front row, left to right: Howard H. Jonsenius, Asa F. Fisk, John D. Retallick, Roy Tewksbury, John H. Glander, William E. Greene. Back row, left to right: Fletcher P. Thornton, Jr., Clarence Morganstern, Bradford West, Charles M. Scherhorn and John D. Dickson.

**JOHN WALDRON CORP.** offers a new Ecco machine that it has recently developed. Copies of Bulletins No. 1000 containing diagrams will be furnished on request by writing to John Waldron Corp., P. O. Box 791, New Brunswick, N.J. Readers on the West Coast should write to E. Elliott Sullivan, 600 St. Paul Ave., Los Angeles 17, Calif. or to Koerner Engineering and Supply Co. in Portland, Ore. **ROHM & HAAS CO.,** Philadelphia, reports a new, low-cost medium capacity cation exchange resin, Amberlite IR-112, having high regeneration efficiency and low leakage characteristics, is now available for general use. The new resin, developed and manufactured by Rohm & Haas, is said to possess all the desirable physical and chemical properties of the polystyrene nuclear sulfonic acid class of exchangers. It is resistant to oxidizing and reducing media, as well as to solvents. It is stable up to 250°F and over the entire pH range. In addition, it is called the most porous cation exchanger developed to date for commercial use.

### Fred Bloch Forms Own Coast Company

**FRED BLOCH,** well known in the Pacific Coast industry, and for the past eight years a member of the firm of Wil-lits & Co., Inc., San Francisco, has withdrawn from that connection and formed a new company in the Bay City.

The new company is Bloch & Co., offices in the Merchants Exchange Bldg., 465 California St. Among accounts he represents for the Coast are Anheuser-Busch Inc., St. Louis, starches, dextrans and glucose; and American Key Products Co. potato starches. Mr. Bloch is also an importer of tapioca flour.



### WAGE NEGOTIATIONS FOR PACIFIC COAST MILLS

IN PORTLAND, ORE., this WAGE CONFERENCE participated in by the AFL Unions and Pacific Coast Assn. of Pulp & Paper Mfgs., came to agreement on increases and benefits for employees of Wash., Ore. and Calif. Mills.

THE BARGAINING TABLE is in middle of picture. Around this table, clockwise, starting at 7 o'clock (lower left): Robert Hetherington, I.B. of P.M., I.B. of P.S.&P.M.W.; John Teevin, P.M.;

John Eyer, P.S. & P.M.W.; Oren Parker, P.S. & P.M.W.; William Riggs, P.S. & P.M.W.; I. J. Lavier, Oregon City, P.S. & P.M.W.; Richard Anderson, Port Angeles, P.M.; Melvyn Melton, Bellingham, P.S. & P.M.W.; William Hastings, Pomona, P.M.; Ed. Zielaskowski, St. Helens, P.S. & P.M.W.; Marion E. Tubbs, Stockton, P.M.; Murray Randall, Port Angeles, P.S. & P.M.W.; William Anderson, Oregon City, P.M.; Arthur Hannaford, P.M.; Iver D. Isaacson, Vice President, P.S. & P.M.W.; Al E. Brown, Vice President, P.M.; John Sherman, Vice President, P.C.

& P.M.W.; A. R. Heron, Crown Zellerbach Corp.; S. W. Grimes, Sec'y., Pacific Coast Assn. of Pulp & Paper Mfgs.; R. E. Bundy, Fibreboard Products, Inc.; F. L. Ziel, Crown Zellerbach Corp.; R. S. Werthelmer, Longview Fibre Co.; H. W. Morgan, Weyerhaeuser Timber Co.; Howard Hiley, Rayonier, Inc.; Reed Hunt, Crown Zellerbach; I. T. Rau, St. Helens Pulp & Paper; L. Yercotte, Puget Sound Pulp & Timber; J. W. Genuit, Fernstrom Paper Mills, and A. B. Moody, Everett Pulp & Paper Co., Div. of Simpson Logging Co.

### Starting Rate on Pacific Coast Up Now to \$1.70

Wage increases of 4½ cents per hour and a jointly-financed health and welfare program were agreed to in Portland, Ore., May 31, by the Pacific Coast Association of Pulp and Paper Manufacturers and delegates from AFL union locals and international officers representing 17,000 workers in 36 plants in Oregon, Washington and California.

Wage and welfare concessions are estimated to cost manufacturers about \$3,250,000 annually. The wage increase means that the starting rate in the Pacific Coast industry is upped to \$1.70 per hour for men and \$1.42 per hour for women.

Pulp and paper union officials said the new health and welfare plan is one of the best negotiated plans in their industry. The employers will underwrite 60% of its gross annual cost. Employee protections

will include life insurance, and non-occupational coverage for accidental death and dismemberment, accident and sickness, surgical, medical and hospital care, plus out-patient diagnostic X-rays and laboratory tests. Maternity benefits are provided for women employees.

John Sherman, Tacoma, vice president of the I.B. of Pulp, Sulfite and Paper Mill Workers, was chairman of the union bargaining group and Alexander R. Heron, San Francisco, vice president of Crown Zellerbach Corp., was chairman for employers. Also participating for the unions were A. E. Brown, Portland, vice president of the paper brotherhood and Ivor Isaacson, Los Angeles, vice president of the pulp brotherhood.

*Man uses paper more than any other commodity except water. You are in an indispensable industry.*

### Wisconsin Meeting On Community Relations

The Information Service—Wisconsin Paper Industry was host June 18, 19, and 20, to the community relations committee of the American Paper and Pulp Association, chairman, N. H. Bergstrom of the Bergstrom Paper Co., Neenah, Wis.

The activities committee, which is a sub-committee of the community relations group, with its chairman, M. J. Schulenburg, public relations director of Kimberly-Clark Corp., Neenah, also took in the activities.

Donald M. Rochester of the American Paper and Pulp Association, New York City, is secretary to both committees.

The story of the Wisconsin "Workshops" and the practices and ideas developed by the IS, WSPI, was fully described in the lead article of the April 1952 issue of PULP & PAPER.



## One of the Men Behind Eastwood Wires

Thomas Barrada

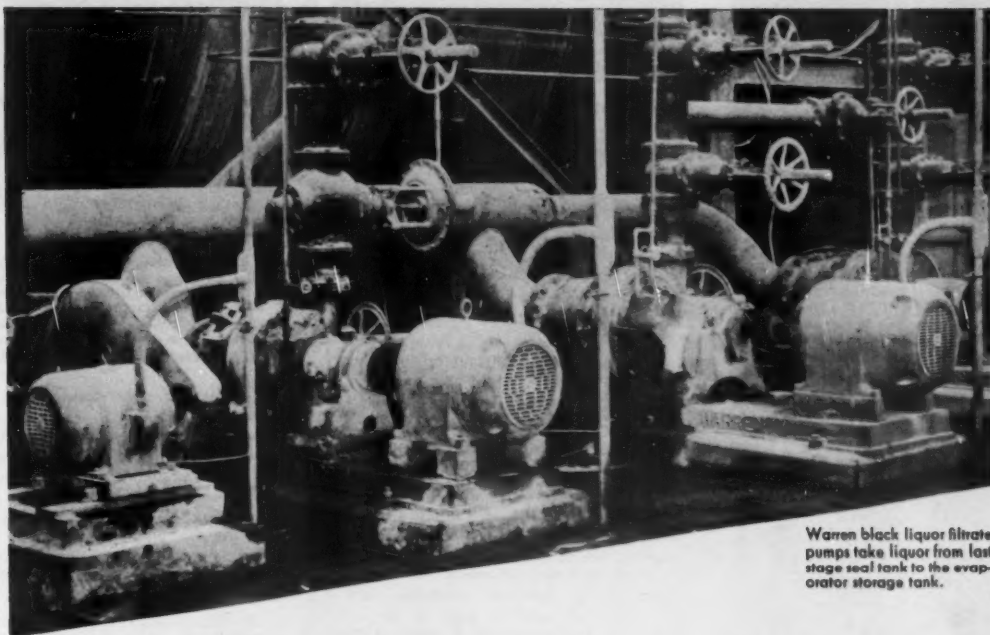
### WEAVING A FOURDRINIER WIRE

Journeyman weaver Thomas Barrada tends a 230-inch loom, set up in 75 mesh; that means there are 17,250 warp wires between the mechanical "finger" in the foreground and the end of the loom. Back and forth across these wires flies a bobbin carrying shute, or filler, wire. Each time it traverses the width of the loom another shute wire is added to the woven wire cloth.

About 72,000 shute wires must be woven into the warp wires to make one fourdrinier wire a hundred feet long. From the first to the last, our skilled weavers watch over every wire to make sure that the paper manufacturer will get a top-quality fourdrinier wire cloth.

**EASTWOOD-NEALEY CORPORATION • Belleville, N. J.**





Warren black liquor filtrate pumps take liquor from last stage seal tank to the evaporator storage tank.

# 32 Warren Pumps

*share in latest expansion program at*

**BRUNSWICK PULP & PAPER CO. Brunswick, Ga.**

From an original rated capacity of 150 tons daily in 1937 to 400 tons daily in 1951, adds another important chapter of progress and expansion to Pulp and Paper Mill history.

In this noteworthy achievement, Warren has been privileged to supply thirty-two Warren Pumps, bringing the total in this mill to approximately **126 Warren Pumps** of various types and sizes and for the handling of liquor, pulped stock, water, etc.

Whether a new mill or the expansion and modernization of existing properties, time-tested experience indicates it is good business to specify:

PP-23

## WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC., WARREN, MASSACHUSETTS

July 1952

81



#### SYRACUSE MEN ADVANCE

C. M. CONNOR (left), who has been named Vice President of W. C. Hamilton & Sons, paper-makers of Miquon, Pa. He is a graduate of Syracuse University and has been with Hamilton since 1949. DR. WILLIAM H. MCPHERSON (right), new Supervisor of Research at Minnesota & Ontario Paper Co., in International Falls, Minn. His appointment was announced here last month. From Syracuse he went to the Institute, then Mead, I.P., and pulping work in Puerto Rico.



#### BROWN CO. EXECUTIVES

GEORGE C. MACDONALD (left), named new Sales Promotion Mgr. for Brown Co. and Brown Corp. of Canada, with headquarters in Boston. This is a new division in Brown. C. G. HENDERSON (right), is Brown Co.'s new Manager of Paper Sales in Chicago. He was formerly with Glidden Co.

#### Heads Australia Technical Group

J. D. Anderson, operations manager of Australian Paper Manufacturers, Ltd., was recently elected president of the Australian Pulp and Paper Industry Technical Association, succeeding Dr. W. E. Cohen who continues as a member of the executive board.

#### AUSTRALIA

S. L. KESSELL, managing director of Australian Newsprint Mills, has recovered from the effects of a fractured skull resulting from being hit by an automobile in Boyer, Tasmania.

J. F. WILSON and G. H. WILTSHIRE, of Australian Paper Mills at Fairfield, Australia, are spending three months at St. Anne's board mill in Bristol, England.

R. H. HURLE and A. R. SLOMAN, chief engineer and research manager, respectively, of Australian Pulp & Paper Mills, have returned after several months overseas investigating new developments.

ASKANIA REGULATOR CO., Chicago, has announced the appointment of Heat & Control, Inc. as its West Coast representative. Heat & Control's headquarters are at 270 Seventh St., San Francisco 3.



#### MIDDLE WEST NOTES

C. W. NELSON has resigned as director of engineer for all Kimberly-Clark Corp. operations because of health reasons. He has had a leading part for 20 years in building and modernizing every K-C plant and operation. He joined K-C in 1913 and his first assignment was rebuilding the Atlas mill in Appleton. His home is on Nicolet Blvd. in Neenah, Wis.

ROBERT PARKINSON of the Institute of Paper Chemistry in Appleton, had the duty and honor of chairmaning its annual spring dinner dance.

ROBERT A. MILLER has been appointed general corporate controller of Kalamazoo Vegetable Parchment Co., Parchment, Mich. STEWART GEELHOOD is assistant controller.

COLA G. PARKER, president of Kimberly-Clark Corp., was one of 33 distinguished University of Chicago alumni awarded citations of merit in Chicago recently. He lives at Menasha, Wis., and received a B.A. and a doctor's degree in jurisprudence in 1912 at the university, before practicing law.

BENJAMIN E. RILEY is new staff assistant to the Lockland, O. carton plant superintendent for Gardner Board & Carton Co. He is a Rensselaer Polytech grad.

ED HAKNA has been promoted to a staff assistant of the Middletown, O. carton plant superintendent. He attended the U. of Cincinnati and Cincinnati School of Graphic Arts.

NEAL I. PAULSEN has been named manager of paper development for Minnesota & Ontario Paper Co., International Falls, Minn. He has been in Mando research 22 years.

HERB RANDALL, vice president and director of research and engineering for Champion Paper & Fibre Co., Hamilton, O., is enjoying his first grandson, Pratt Madison Harris III, a native of Pittsburgh.

HAROLD C. SPERKA has been promoted to staff assistant to Roy J. Sund, executive vice president in charge of manufacturing, Marathon Corp., Menasha, Wis. Mr. Sperka will assist in both central staff and Menasha plants manufacturing areas. Before coming to Marathon in 1946, Mr. Sperka was in production at Thilmany Pulp and Paper Co., Kaukauna. He is a graduate of Lawrence College, and received a master of science degree from the Institute of Paper Chemistry in 1934. He is succeeded as general superintendent of the Parafilm plant by LEE C. HEROMAN, also a Marathon employee since 1946. He started as a chemical engineer and for the last two years was superintendent of the waxed paper plant. Heroman is a graduate of Louisiana State University and received his master's degree from MIT.

HOWARD E. TETER has become pro-



#### NEW OHIO LEADERS

C. E. BRANDON (left), Harvard Paper Mills, who is new Chairman of Ohio TAPPI section, and J. L. CLOUSE (middle), Oxford Miami Paper Co., who is new Vice Chairman, and LEE BUECHLER (right), Crystal Tissue Co., Corresponding Secy. Other officers: R. D. McCarron, Stein-Hall, Treas. and G. B. GRIGG, Cincinnati Gas, Recording Secy.

duction manager for white papers, assisting GEO. PRINGLE, last month announced as vice president for white paper operations, and O. B. MASON, executive assistant, has succeeded Mr. Teter as division manager in Chillicothe, O., for The Mead Corp. Assisting him will be JOHN E. GRAVES, who was assistant general superintendent, and becomes production manager. CHARLES LUDWIG continues as general superintendent.

G. R. WILLIAMS, now superintendent of Mead's No. 1 Paper Mill, Chillicothe, will assume the superintendency of No. 3 Mill. E. C. HENDRICKSON will be superintendent of No. 1 Mill, moving up from assistant superintendent. He is succeeded by DONALD COLLINS, assistant to the division manager.

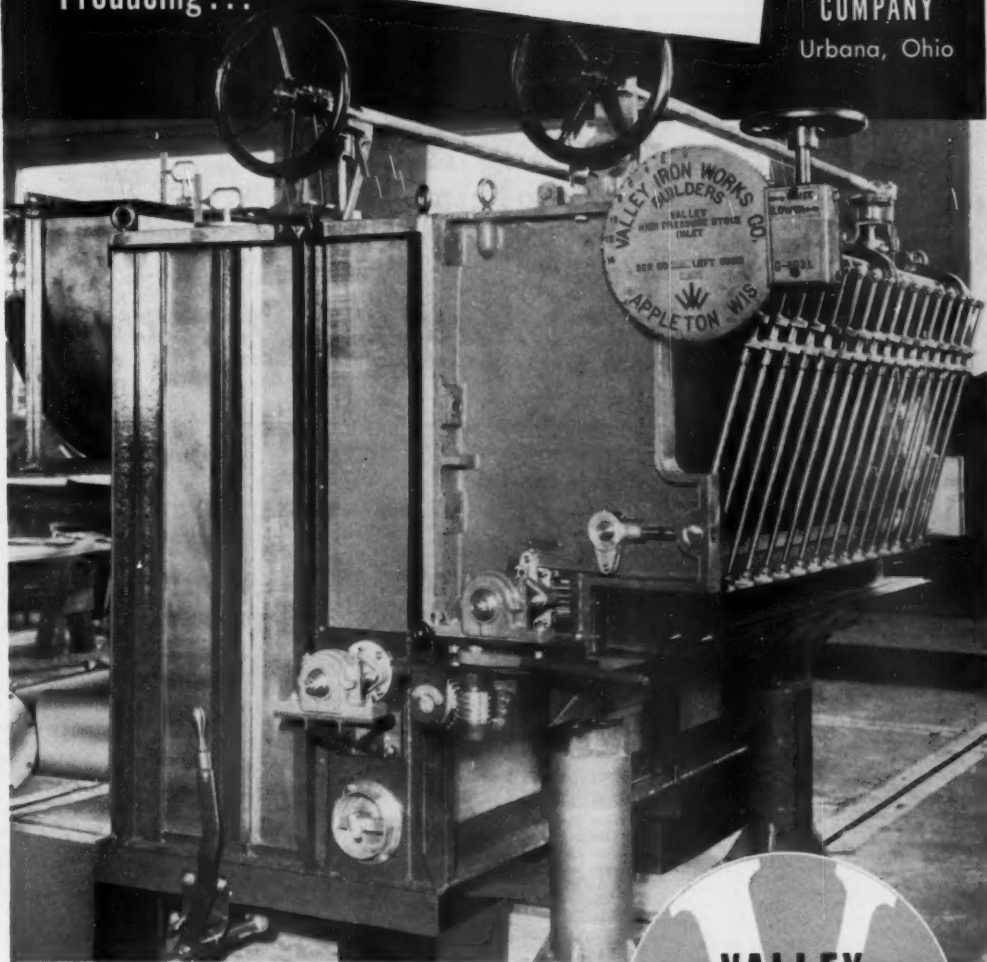


AT NEW YORK PULPMEN'S OUTING: Top View: Dave Brittain from Chicago, Mead Pulp Sales (left), and Chuck Champion of Vanderbilt Co., who won garden hose at golf. Middle: C. "Ed" Silvis (left), Parsons & Whittemore, Inc., and Wm. M. McNair, St. Regis Sales Corp., get together for a quiet chat. Below: Wm. Barrett, Mead Sales, and James Paton, St. Lawrence Sales Co., Ltd., console each other on lost opportunities on the course.

One of two  
**VALLEY Inlet-Headbox  
Combinations  
Producing...**

**Howard Bond**

... for  
**HOWARD PAPER  
COMPANY**  
Urbana, Ohio



Fully adjustable on the fly, such units as these  
will insure correct stock flow to your wire.

*Eventually Valley... why not now?*

July 1952



# WIRE CLOTH

## FOR PULP AND PAPER MILLS

### PHOSPHOR BRONZE-MONEL-STAINLESS STEEL

AVAILABLE IN A BROAD RANGE OF CONSTRUCTIONS AND ALLOYS FOR CYLINDER FACES, SAVE-ALLS, DECKERS AND THICKENERS, FILTERS AND WASHERS

*Pacific Coast Supply Company*  
PORTLAND, OREGON • SAN FRANCISCO, CALIFORNIA

#### WANTED

Man with experience on laminating machine to work out new products and get sales for such equipment, preferably on thicknesses from 15 to 125 point inclusive. Write to P&P Box 117, c/o PULP & PAPER, 71 Columbia Street, Seattle 4, Washington.

#### A NEW DIMENSION IN FORESTRY

More and more forest industries, timber holders, logging operators and financial institutions are using our services in the following fields:

- GENERAL CONSULTATIONS
- TIMBER MANAGEMENT
- UTILIZATION
- PROTECTION
- SILVICULTURE
- ENGINEERING
- SURVEYS
- PHOTOGRAMMETRY
- APPRAISALS
- MANAGEMENT
- FINANCE
- INSURANCE
- PUBLIC RELATIONS
- MARKET SURVEYS AND TRADE EXTENSION
- PURCHASING, TRAFFIC AND INSPECTION

We invite you to consult with our Foresters, Engineers and Managers.

**C. D. SCHULTZ**  
A COMPANY LIMITED  
FORESTERS & ENGINEERS  
MANAGEMENT CONSULTANTS  
VANCOUVER • SEATTLE

#### FOR SALE

2—84" Pressure Filters including 1—6" Venturi Valve reduced to 4", 1—24" Coagulant Tank, 2 Mercury Manometers on outlets, outside and inside piping for Filters, 1 Bailey 4" Reducing Valve, 1 Bailey 4" Strainer placed ahead of Reducing Valve, 1 Crane Pressure Relief Valve.

#### J. NEILS LUMBER COMPANY

505 Public Service Bldg. Portland, Oregon

#### CELLULOSE EXPORT TO WESTERN GERMANY

Agent having best connections with paper industry of Western Germany desires now or later representation for Western Germany of cellulose manufacturers and exporters. Please write P&P, Box 112, c/o PULP & PAPER, 71 Columbia St., Seattle 4, Washington.

#### ASSISTANT SUPERINTENDENT —PAPER MILL

Technical graduate with minimum 10 years paper mill experience. Minimum 5 years experience in production supervision. Flooring and Roofing Felt Mill, and building paper specialties. Two single-cylinder machines 160 tons per day. San Francisco Bay Area. Reply with resume. PABCO PRODUCTS INC., Emeryville 8, California.

#### SALES ENGINEER

Northwest Company manufacturing stainless steel process equipment for pulp mills and other industries. Engineering or pulp mill background preferable. Will require some traveling. Prefer a man already located in Washington or Oregon. Write to P&P Box 114, c/o Pulp & Paper, 71 Columbia St., Seattle 4, Washington, giving complete details as to education, experience, etc. Replies will be held confidential.

#### PLANT ENGINEER

To coordinate activities of design engineering firm and contractors during construction. Direct all engineering and maintenance in completed mill. Should have not less than ten years experience in pulp and paper mill maintenance. Experience in maintenance of sulphate pulp production facilities necessary. Familiarity with groundwood and newsprint production desirable. Summarize experience. Write to P&P Box 121, % PULP & PAPER, 71 Columbia St., Seattle 4, Washington

#### PURCHASING AGENT

To organize Purchasing Department for new mill. Experienced in buying of major equipment and supplies for pulp and paper production. Spare parts and mill stores warehousing experience desirable. Summarize work history. Write to P&P Box 122, % PULP & PAPER, 71 Columbia St., Seattle 4, Washington.

EXPORT MANAGER, or assistant, young, sales minded, paper industry experience, presently with converter, good knowledge Spanish, seeks position offering opportunity. Write to P&P Box 119, c/o PULP & PAPER, 71 Columbia St., Seattle 4, Washington.

#### MEN WANTED—POSITIONS OPEN

We can place—Superintendent for rag content and fine papers; supt. multiwall sack plant; asst. supt. industrial relations; asst. supt. Fourdrinier mach. mill; asst. supt. paper converting, printing and packaging plant.

Chemists and chemical engineers for mills and for demonstrating and selling, also laboratory men; finishing foreman; color matcher; Cylinder and Fourdrinier mach. foreman.

Superintendent of Engineering, maintenance supt., designers and draftsmen; salesman and asst. sales mgr. for rag content and fine papers; beater engineers; master mechanics and plant engineers, salaries up to \$10,000 a year.

**LIST YOUR CONFIDENTIAL APPLICATION WITH US** to keep informed of attractive positions open in the pulp and paper mills.

**CHARLES P. RAYMOND SERVICE, INC.**  
294 Washington St., Boston 8, Mass.

SPECIALISTS IN PLACING AND IN SUPPLYING PULP AND PAPER MILL EXECUTIVES

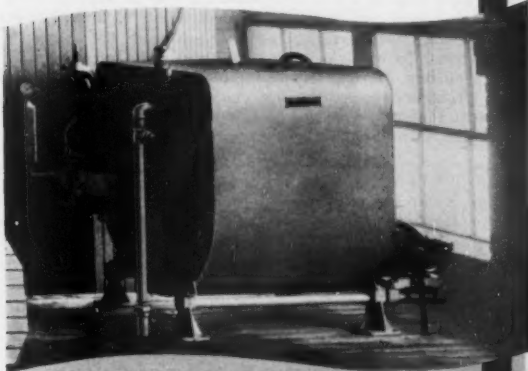
**PULP & PAPER**



# here's how to maintain chemical feeding accuracy to $1\frac{1}{2}\%$

Your plant operations will benefit when you have assurance like this! With Infilco equipment, random samples show no variation in chemical content exceeding  $1\frac{1}{2}\%$ .

Because of the unique vertical agitation principle of operation, liquid circulates with an *up and down* motion in the mixer... thus avoiding stratification. There are no corners or "dead spaces" in the half-round tank where solids can collect... there's no need for daily or weekly clean-outs.



Infilco Chemical Mixers and Feeders combine in one continuous automatic process, the preparation of a uniform chemical solution or suspension and volumetric feeding of the prepared material.



**INFILCO INC.**

Tucson, Arizona

Plants in Chicago & Joliet, Illinois

FIELD ENGINEERING OFFICES IN 26 PRINCIPAL CITIES

## CHECK THESE ADVANTAGES —

You can depend on uniform mixing and accurate feeding of soluble or insoluble materials with water, oil and other liquids with the Infilco Chemical Mixer and Feeder and related equipment. Here's the automatic unit designed particularly for water conditioning, sewage treatment and process liquid conditioning... and here are valuable operating advantages offered only by Infilco —

1. Plow-shaped agitators keep the liquid circulating up and down to avoid any degree of stratification.
2. Half-round tank, with rotating element, eliminates corners and dead spaces. "No Sump" required.
3. Equipped for constant or variable rate feeding.
4. Collector cups pass downward through chemicals with orifices up. This design effects "blow-out." Keeps orifices clean.
5. Two or more chemicals may be prepared and fed together. Discharges may be divided with regulated feed rates to two different points.
6. Constant "head" over orifices during entire period of discharge.
7. Changes in drive speed do not affect regularity of feed.
8. Designed for the full range of process industry capacities.

Check these advantages for your operation by sending for the Bulletin described below.

### Below

Chemical measuring cup discharging through orifice into the collector funnel. The cut-off shield above the collector funnel can be positioned by the manual variator to change chemical feed quantities.



### Above

Infilco Mixer and Feeder with section tank cutaway to show unique plow-shaped agitators, chemical measuring cups and collector funnel.

Write for case histories  
and illustrated bulletin

### INFILCO INC.

Box 5033, Tucson, Arizona

We are interested in mixing and feeding

(name chemicals)

in one continuous and automatic process for

(name process liquid)

Please send us your Chemical Mixer-Feeder Bulletin 350D. No obligation, of course.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

P.O. Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

## INSTITUTE PANEL

CONTINUED FROM PAGE 38

retention. It actually increases the strength of the paper sheet and makes possible some of these specialities, such as the papers which are resistant to different kinds of liquids.

**DR. VAN HORN:** The poor old papermaker has to use tons and tons of additives which probably do not involve either the electrostatic forces we were talking about or chemical bonding. Many additives, such as clay, just more or less sit around on the fiber. These supposedly inert materials might be bound in some way to fibers by the use of intermediates but before we come to that day, we have a lot of work ahead of us.

**DR. WHITNEY:** There is so much we don't know about bonding. There are many forces acting on the fibers, the additives, and the water.

**MR. STRANGE:** Let's proceed to the final item on our agenda, which is the papermaking fiber and its environment.

**DR. WARD:** We have to distinguish between cellulose and the papermaking fiber. Sometimes papermaking fibers are processed to a point where they are substantially cellulose, but other papermaking fibers may still contain a rather high quantity of noncellulosic constituents and some of these noncellulosic constituents are not particularly resistant to chemical degradation.

**DR. VAN DEN AKKER:** Under the moisture contents which are involved in ordinary use, the fiber has great resistance to degradation by impact and other externally applied forces.

**DR. VAN HORN:** Inasmuch as the cellulose fiber has an affinity for water, it then provides an environment for attack by certain organisms. Even so, I do feel that the fiber is relatively resistant to biological degradation. Some micro-organisms have the power to break up the long-chain molecules, into intermediate compounds which are more easily digested, or even into the simple sugars themselves, which then undoubtedly form a very tasty meal. Fortunately, however, there are relatively few organisms which have this ability.

**MR. DICKEY:** Of the three types of degradation, perhaps the biological forces are more troublesome than either the chemical or physical forces.

**DR. VAN HORN:** One important avenue for progress in this industry lies in the re-use of papermaking fibers. This matter OF TOUGHNESS and durability of the papermaking fiber cannot be overemphasized.

**MR. STRANGE:** The papermaking fiber is not a simple, obvious structure. It is about as complicated as anything can be and it still presents many challenging riddles. Papermaking has always been a fascinating industry. The discoveries that lie ahead will make it even more so.

### Students' Session

President D. K. Brown of Neenah Paper Co. presided at the session in which students and their work were featured.

In a discussion of the economics of tariffs, the students and lecturers brought out that lack of tariff protection forced U.S. mills out of newsprint and to ungraded paper products. Dr. Ruth Shall-

cross. Institute lecturer, and Howard Baumgarten, both of the staff, and several students participated: William Haselton, Jerome Brezinski, Jack Jayne, William Kroeschell, Victor Mattson and Robert Parkison.

Dr. Lewis discussed the course on preparation for research, and introduced other students, David Lea, who discussed effect of air moisture on paper; William Hoge, who discussed sulfite pulping of black cherry; Edward Taylor, who described pollution caused by dams below mills, and Thomas Zentner, who reviewed his thesis on kraft odors.

### Great Northern To Add Two Newsprint Machines

Great Northern Paper Co. has been granted a certificate of necessity for a \$30,000,000 newsprint mill at East Millinocket. Me. They are planning two high speed newsprint machines with daily capacity of 400 tons, and auxiliary equipment necessary for this production. No contracts have been placed, but much of the preliminary planning work has been completed.

### Maine Holds Safety Conference

The 25th annual Maine State Safety Conference will be held at York Harbor, Me., September 11 and 12 with panel meetings on pulp and paper scheduled for each day. The meeting will be held at the Marshall House, and A. F. Minchin, secretary, Industrial Safety Division, Department of Labor and Industry, is in charge of arrangements.



## You can't think of felts without thinking of HAMILTON FELTS

As a mill man, you are a practical man, not given to abstract thinking. Even such a common word as *paper* suggests to your mind the particular product you are manufacturing—book, bond, writing, tissue, kraft or board.

You think of what furnish goes into it; how it is reduced to proper consistency by the jordan and beaters; how it travels from the fourdrinier or the cylinders on the felt that carries it through the press and to the driers.

And you can't possibly think of felts without thinking of Hamilton Felts. You know that all felts look much alike and that they are the most perishable items of machine equipment.

Yet you somehow know that Hamilton Felts remove water faster; last longer; give finer finish to your sheets. And that is why you can't think of felts without thinking of Hamilton Felts.

# Hamilton Felts

• From the thinnest tissue to the heaviest board there is a Hamilton Felt that will do your work better, faster and at lower cost.

MIAMI WOOLEN MILLS  
Established 1858

SHULER & BENNINGHOFFEN, HAMILTON, OHIO

## WORKS MANAGER FOR PAKISTAN PAPER MILLS

The Pakistan Industrial Development Corporation established by the Government of Pakistan under the Pakistan Industrial Development Corporation Act, 1950, invites applications for:

(a) One post of Works Manager for a Paper Mill near Chittagong in East Pakistan, to produce 100 tons per day of fine and superfine papers, utilizing bamboo as raw material using sulphate process,

(b) One post of Works Manager for a High-Grade Board Mill at Nowshera in the North West Frontier Province in Pakistan to produce 25 tons per day of high-grade boards or writing and printing papers utilizing mainly Eulaliopsis Binata, Andropogon Schoenanthus or possible Gaggles using Mono-Sulphate Process,

(c) One post of Works Manager for a Straw-Board Mill in the Gujranwala District of the Punjab to produce 25 tons per day of straw-board, utilizing cereal straws using Hydra Pulper Process.

**QUALIFICATIONS:** for (a) a degree in Mechanical or Chemical engineering or at least 10 years practical experience of management of a comparable Mill.

For (b) & (c) a degree as in the case of (a) or at least 5 years practical experience of a comparable Mill.

**NOTE:** Applicants must be familiar with plant layouts for comparable paper or board mills. Preference will be given to those who have experience of paper or board mill construction also. Candidates of non-Asiatic domicile should have a good working knowledge of English.

**PAY:** Adequate pay will be offered in accordance with qualifications and experience.

**APPOINTMENT:** will be on Contract, terminable by three months' notice on either side, for a period of three years after satisfactory completion of six months' probation. Other general terms of contract will include (1) accommodation on payment of reasonable rent, (2) one single passage to candidate for joining duty, (3) passage for wife and one child on successful completion of probation, (4) fortnight's leave within Pakistan for every completed year of service, and (5) three months' leave on completion of contract. **APPLICATIONS** in duplicate stating minimum pay acceptable, age, nationality and domicile together with two passport size signed photographs, a detailed statement of career including emoluments drawn from time to time, present occupation, and true copies of certificates and testimonials, references from two responsible persons not related to the applicant should be addressed to: The Secretary, Pakistan Industrial Development Corporation, 4th Floor, Aimai House, Victoria Road, Karachi 5, Pakistan.

Interested persons should get in touch with the Pakistan High Commissioner in Canada, 505 Wilbrod Street, Ottawa 2, Ontario, as soon as possible.

## West Va. Quits Making Calcium Carbonate

The manufacture of precipitated calcium carbonate, which has been manufactured by the West Virginia Pulp and Paper Co. since 1912, will be discontinued October 31 of this year. The decision is said to have been prompted by a shift in demand toward technical grades difficult to produce competitively.

The company says that efforts will now increase to develop further the uses of lignin which is another product of its Industrial Chemical Sales Division. The Charleston, S.C., plant of the company has lignin raw material available for production of around 400 tons per day.

July 1952

The advertisement features a large, detailed illustration of a Nash vacuum pump. The pump is shown from a side-on perspective, highlighting its cylindrical body, various ports, and a mounting base. It is positioned on a playing card, specifically the King of Spades, which is part of a fan of cards. The background of the advertisement is dark and textured, suggesting a mechanical or industrial setting.

**ONLY NASH VACUUM PUMPS  
HAVE ALL THESE FEATURES**

- One Moving Element. Non-pulsating Vacuum.
- No Internal Parts In Wearing Contact. No Internal Lubrication. Handles Liquid With Air.
- No Expert Attendance. Constant Efficiency.
- Low Maintenance Cost.

**Plus-**

**NASH ENGINEERING COMPANY**  
410 WILSON AVE., SO. NORWALK, CONN



#### IN BYRON JACKSON NEWS

**DON T. METZ** (left), Branch Mgr., Pump Div., Byron Jackson Pump Co., San Francisco, is celebrating his 25th year this year with the Los Angeles manufacturer of centrifugal pumps of all kinds. He was a top sales representative out of the Los Angeles office when he moved to San Francisco two years ago, where his contacts in pulp and paper field in the West increased. **ED OVERALL** (right), young home office engineer with Byron Jackson has been appointed to be Special Representative to the Pulp and Paper Industry. Eventually his job will call for contacts all over the North American continent. Born in Texas, raised in California, his college was U. of Washington. He is a bachelor.

#### IN SOUTHERN U. S.

**R. B. FELLOWS** (left), is new South Atlantic Division General Manager for Reichold Chemicals Inc., with headquarters at Jacksonville, Fla., moving there from the Sales Manager post at Southern Division offices in Tusculoea, Ala. At "Jux" his division will include a new manufacturing plant for resins and chemicals, Reichold's 10th such plant in U. S. Also research will be carried on in terpene derivatives. **WILL CAIN** (right), has been appointed New Orleans Sales Representative for A. O. Smith Corp., builders of digesters and steel fabricators. He is a graduate of Texas U. and moves to New Orleans from the Houston office.

#### Big Machines for South

Two more big machines for the South are now in the production stages. National Container Corp. at its new kraft mill in Valdosta, Ga., will have a 240 in. Fourdrinier. Continental Can Co., Inc., Hopewell, Va., is going to have a 270 in. machine, also Fourdrinier. Bagley & Sewall Co. is building both.

#### Boston Office of Am. Cy.

American Chemical Co., Calco Chem. Div., announces its Boston office has moved to 1055 Commonwealth Ave., Boston, 15. Telephone: Stadium 2-6000.

## FIELD SERVICE ENGINEERS

Excellent Opportunity With

Paper Mill Supplier

for liaison work between paper mills  
and a large machine clothing supplier

Qualifications should include M.E. or Ch.E. background, general knowledge of paper mill operations, and sales interest and personality.

Some traveling required. Future selling opportunity, if desired. Salary open and dependent upon amount of related experience.

Send full resume of education and experience to P & P Box 120, c/o Pulp & Paper, 71 Columbia St., Seattle 4, Washington.

All information held in strict confidence.

## What's corn doing "deep in the heart of Texas"?

Research discovered that drilling for oil could be expedited by the use of a binding agent made of a product of corn. This firmed up the side walls... also aided in the early flow of sludge. "Black gold" speeded by yellow corn! This is but one of the numerous examples of how continuous basic research in corn helps American industry... helps you.

#### Corn products in paper manufacture

Starches and adhesives... superior formula ingredients for such processes as beating, corrugating and laminating... and other new techniques for using various corn products are being developed and refined by Corn Products Refining Company.

If you have a production problem why not check with Corn Products? A complete line of corn products for every purpose is available. Technical service is yours... no obligation, of course.

#### CORN PRODUCTS REFINING COMPANY

17 Battery Place, New York 4, N. Y.

Manufacturers of

GLOBE STARCH®

AMIJEL®

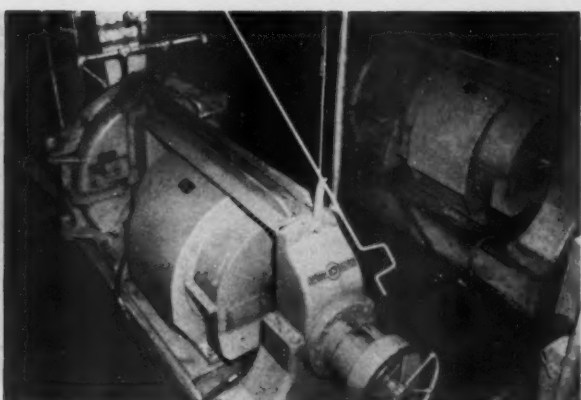
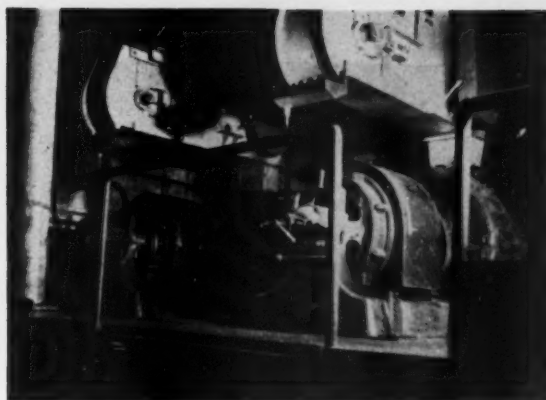
CORAGUM®

LAM-O-DEX®



PULP & PAPER





## AUTOMATIC JORDAN PLUG CONTROL

An Emerson automatic jordan plug control unit was installed last year on the Jones Majestic jordan of No. 3 Paper Machine at Camas, Wash., and this year on another Jones jordan at West Linn, Ore., both Crown Zellerbach Mills. The Controller-recorder unit at Camas has been in continuous operation since that time, while the other is being tested with different stocks.

The stock flow is from beaters to beater chest, to machine chest, through consistency regulator and stuff box into jordan. Stock from the jordan drops directly into the suction side of the fan pump and is pumped with white water into the machine headbox.

The control system was developed by Emerson Manufacturing Co. with instrumentation provided by Taylor Instrument Co. Heart of the system is a spring-loaded compression and expansion element mounted in place of the familiar hand-wheel and screw. This element, commonly called an air motor, is a device which controls the position of the plug in the shell.

The jordan plug shaft is coupled to a volumetric type strain gage, or pressure element, through thrust bearings. The gage is connected by tubing into a Taylor Pulsoscope recorder and controller with the gage supplying the actual pressure to be recorded on the chart. Operation of the recorder also actuates the controller mechanism in the instrument, thereby proportioning air up to 50 p.s.i.g. into the jordan plug air motor. The instrument controls air pressure into the plug and will maintain any predetermined set pressure between plug and shell knives.

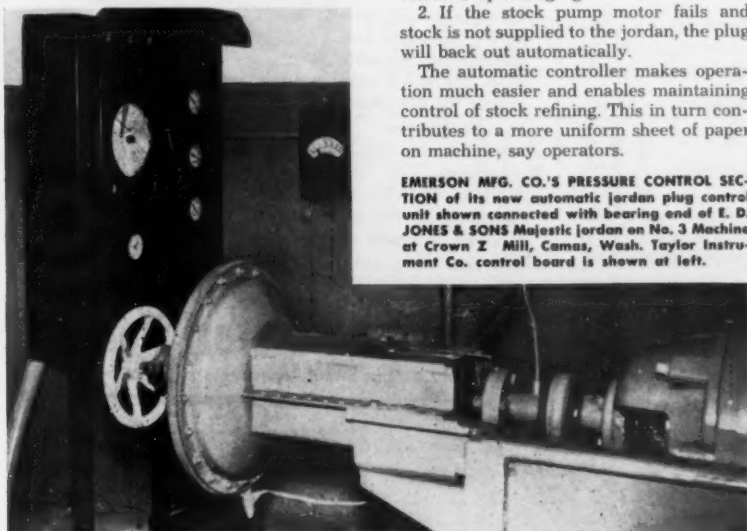
The instrument chart records the pressure between the shell and plug knives for a 24 hour cycle. The recorded charts provide a record of daily stock treatment changes. The air motor is provided with a hand wheel, so manual operation of the plug is possible.

Two safety features can be incorporated:

1. In event the jordan motor stops due to power outage or other reasons, the plug will immediately back out of the shell and cannot be forced into the shell until the motor is operating again.
2. If the stock pump motor fails and stock is not supplied to the jordan, the plug will back out automatically.

The automatic controller makes operation much easier and enables maintaining control of stock refining. This in turn contributes to a more uniform sheet of paper on machine, say operators.

**EMERSON MFG. CO.'S PRESSURE CONTROL SECTION** of its new automatic jordan plug control unit shown connected with bearing end of E. D. JONES & SONS Majestic jordan on No. 3 Machine at Crown Z Mill, Camas, Wash. Taylor Instrument Co. control board is shown at left.



**FIR-TEX INSULATING BOARD CO., St. Helens, Ore.,** increases control, quality, and quantity of stock by installing modern equipment in first refining stages. (1) Two of the four **BAUER BROS. PULPERS** and (2) two **SPROUT-WALDRON REFINERS** doing the job.

## Bauers and Sprout-Waldrons Combined by Fir-Tex

Since early 1948 a continuous modernization-expansion program of refining operations has been carried on at Fir-Tex Insulating Board Co., St. Helens, Ore. This resulted in considerable product improvement and control along with about 20% increase in daily capacity.

Conversion has been gradual—installing one machine at a time without a major change in production and giving ample time to prove results with each addition.

Four Bauer pulpers and two Sprout-Waldron refiners have entirely replaced hammer shredders, formerly used in the first stages of refining; each machine uniformly and automatically fed. One of the four machines operates in conjunction with a digester used as separate unit for experimental work and special fiber treatment.

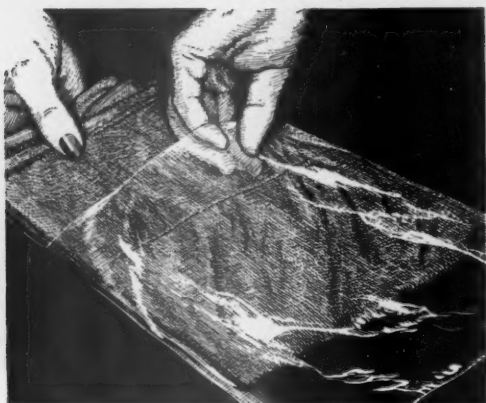
Controls throughout the system to assure uniform rates of refining and acidity received particular attention. Consistency control has been accomplished through using four DeZurik consistency regulators in the refining room to provide uniform stock for subsequent refining by Weiner refiners and Shartle Jordans.

The system prepares stock at rate of 150 tons per day, supplying a Beloit wallboard machine for making all the company's various insulating building and sound-deadening wallboards, which it has made for many years under special patents.

Franklin D. Griffith is president and Thomas W. Dant is vice president, both of Portland, Ore., and both pioneers in western wood products industries. Berney B. Luff is superintendent and William Woolstenhoolme, assistant superintendent, of the Fir-Tex plant.

## Milprint Sells Plant

U. S. Rubber Co. has purchased from Milprint Inc., of Milwaukee, its plant in Stoughton, Wis., built by Milprint in 1947 for manufacture of vinyl films. Milprint sold the plant in order to concentrate on packaging and printing business. U. S. Rubber will use the plant for new products, principally plastic films.



## A Finish With Eye Appeal

The glossy surface of this glassine paper attracts the eye—the fine finish is smooth to the touch. Another sale for the right kind of calendering.

Paper-makers throughout the country rely on Butterworth Calender Rolls for top quality finishes at low cost. Their own experience with Butterworth Rolls has convinced them.

Make this simple test. Put a single Butterworth Roll in the stack. See and feel the difference in the finish. Time it in operation. Note the extra hours of service without expensive "down-time".

Butterworth Calender Rolls for coated stock are made of fine grade long staple cotton. Made for super and glassine from high quality paper. We can also refill your present rolls. Write us of your needs.

For full information, write or call H. W. Butterworth & Sons Company, Bethayres, Pennsylvania — 187 Westminster Street, Providence, R. I. : 1211 Johnston Building, Charlotte, N. C.

# Butterworth

## CALENDER ROLLS



Mill at Port Alberni

**BLOEDEL  
SUPERTARE  
KRAFT**



Mill near Nanaimo

**HARMAC  
BLEACHED  
SULPHATE**



Two great mills, producing bleached and unbleached Sulphate pulp, provide a reliable open market supply for discriminating buyers.

The "brightness" of HARMAC pulp with the chlorine dioxide system of bleaching, and the cleanliness of BLOEDEL KRAFT, are features that contribute to the popularity of these products in world markets.

Rail and deep sea facilities at both mills.

**MacMILLAN & BLOEDEL LTD.**

837 West Hastings Street, Vancouver 1, Canada

**Latest Information —**

**PULP & PAPER's** on **PULP AND PAPER MILLS**  
of **NORTH AMERICA**

## **5 Directories**

HANDY...POCKET-SIZED...and COMPLETE

### AREAS COVERED:

**PACIFIC COAST EDITION—(\$4.00):** Arizona, California, Colorado, Idaho, Montana, Oregon, Washington . . . British Columbia.

**SOUTHERN STATES EDITION—(\$4.00):** Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia . . . Mexico, Central America, West Indies.

**NORTHEAST EDITION—(\$4.00):** Connecticut, Delaware, Maine, Maryland, Massachusetts, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia.

**MIDWEST EDITION—(\$4.00):** Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Oklahoma, Wisconsin . . . Eastern Canada.

**NORTH AMERICAN EDITION—(\$10.00):** Composite of the four regional editions and personnel index.

### *"Easy to Find what you Need to Know"*

In these handy pocket-size editions . . . with data easy to find . . . we have compiled the most complete listing available of key personnel and officials for the pulp and paper manufacturing industry of the entire NORTH AMERICAN continent.

An "outstanding" feature is the alphabetized cross index of the personnel listings, making it easy to locate the current whereabouts and responsibilities of individuals in the industry. The personnel index alone is well worth the purchase price. And . . . it is not necessary to buy a complete NORTH AMERICAN EDITION to have the full personnel index. Each regional edition contains the personnel index for the entire continent.

### GENERAL CONTENTS:

ALPHABETICAL DIRECTORY OF KEY PERSONNEL, WOOD FIBRE WALLBOARD MANUFACTURERS, PRODUCTION DATA, CAPACITIES, EQUIPMENT, FACILITIES, MILL AND HEAD OFFICE KEY PERSONNEL, ASSOCIATIONS ALLIED WITH PULP AND PAPER MANUFACTURING

## **PULP & PAPER**

71 Columbia Street, Dept. D  
Seattle 4, Wash.

Fill in and return this form:

**RESERVE  
YOUR COPY**  
of the NEW edition of the  
**PULP & PAPER Directory**

★  
**SPECIAL**

Place a check mark here—if you wish our COMBINATION SPECIAL. One year's subscription to PULP & PAPER plus the DIRECTORY you have indicated.

Name .....  
(Please Print)

Company .....

Address .....

City ..... Zone ..... State .....

☐ Check Enclosed

☐ Please Bill Me

### CHECK HERE

☐ \$10.00

COMPOSITE

**NORTH AMERICAN EDITION**

\$12.00 — Including PULP & PAPER subscription

☐ \$4.00

**MIDWEST EDITION**

(Including Eastern Canada)

\$4.00 — Including PULP & PAPER subscription

☐ \$4.00

**NORTHEAST EDITION**

\$4.00 — Including PULP & PAPER subscription

☐ \$4.00

**SOUTHERN STATES EDITION**

(Including Mexico & Central America)

\$4.00 — Including PULP & PAPER subscription

☐ \$4.00

**PACIFIC COAST EDITION**

(Including B. C.)

\$4.00 — Including PULP & PAPER subscription

July 1952

91

## Take your choice of IMPELLERS

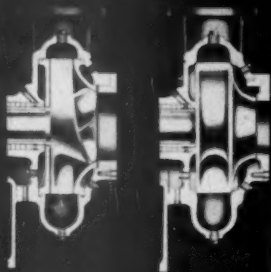
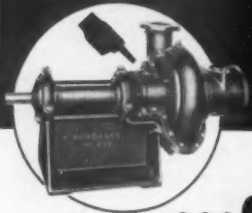


Figure 5460P  
Open Impeller

Closed Impeller  
Figure 5460



**...and  
pump any stock!**

Just choose the type of impeller *you need*, and this Fairbanks-Morse Pump will efficiently pump *any* type of paper stock!

Choose Figure 5460P Pumps with open impellers if you're pumping clean, homogeneous stock of heavy consistency . . . but Figure 5460 Pumps with the famous two-vaned, closed impellers are the best choice for handling fibrous and stringy stock.

With either choice, you're assured the same efficient, dependable Fairbanks-Morse quality . . . so check with your Fairbanks-Morse pump dealer or branch pump engineer . . . or write Fairbanks, Morse & Co., Chicago 5, Ill.



**FAIRBANKS-MORSE**

*a name worth remembering when you want the best*

PUMPS • DIESEL LOCOMOTIVES • ELECTRICAL MACHINERY • SCALES  
HOME WATER SERVICE EQUIPMENT • RAIL CARS  
FARM MACHINERY • MAGNETOS

*The Only...*

**FABRI-VALVE**

FABRICATED ALLOY VALVES

Look for this Trade Mark



*Accept no substitute*

THE VALVE THAT  
MEETS YOUR  
SPECIFIC NEED



*Save*

ON ORIGINAL PRICE,  
INSTALLATION and SHIPPING COSTS



FABRI-VALVES are complete weldments from rolled plate, thus eliminating any porous areas and insuring proper thicknesses where designed and are therefore superior to cast types.

Designed to control the flow of heavy paper stock and liquor solutions with a minimum of maintenance. Made from all types of stainless steel, monel or any combination. Contact nearest agent.

Sizes 2" to 24"  
in stock.

Special orders  
in 30 days.

#### AGENTS:

SOUTHERN CORPORATION  
Charleston, S. C.  
M. J. GIGY & ASSOCIATES  
San Francisco, Cal.  
JOHN B. ASTELL & CO.  
New York, N. Y.

NORTHWEST COPPER WORKS, Inc.  
Portland, Ore.  
THOS. W. MACKAY & SON, Ltd.  
Vancouver, B. C.  
CHANDLER BOYD CO.  
Pittsburgh 19, Penn.

**FABRI-VALVE**

CO. OF AMERICA

2100 N. Albina Ave., Portland 12, Oregon

PULP & PAPER





**Efficient Design**

**Careful Accurate Fabrication**



**Comprehensive Service**

## **GOSLIN-BIRMINGHAM**

The four most important steps in  
modernization or expansion of your



### **BLACK LIQUOR EVAPORATOR INSTALLATIONS**



**GOSLIN-BIRMINGHAM MANUFACTURING CO., Inc.**

BIRMINGHAM, ALABAMA

CHICAGO: F. M. deBoers and Associates, 20 North Wacker

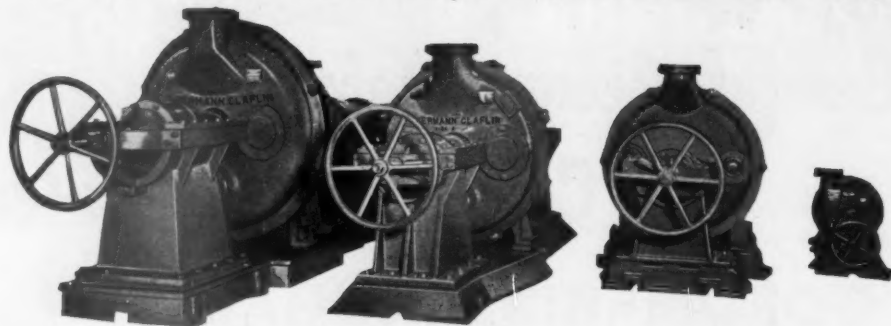


### **the *New* Gilbert & Nash 434 UG Wire and Felt Guide**

This newest guide of the 50 year old Gilbert and Nash line features Low Head design and enclosed reduction gear. Speed to 2000 1/min. Engineered throughout to traditional Gilbert and Nash standards. Write for complete specifications.

**Gilbert & Nash Company • Appleton, Wisconsin**

## **HERMANN** *Improved* **CLAFLIN**



### **CONTINUOUS BEATER & REFINER**

EXCLUSIVE SALES AGENT: THE EMERSON MFG. CO., LAWRENCE, MASS.

**THE HERMANN MANUFACTURING CO.**  
**LANCASTER, OHIO**



ARE MADE IN

**ORISKANY, N. Y.**

by **H. WATERBURY & SONS CO.**

Sold in the West

by **JOHN V. ROSLUND**

**PACIFIC BUILDING - - PORTLAND, OREGON**

Tel. CA 6161

# colloidair

**SAVE ALL**

*...guaranteed  
to clarify  
white water  
to less than  
1/2 pound  
filterable solids  
per 1000 gallons*

Write for complete information

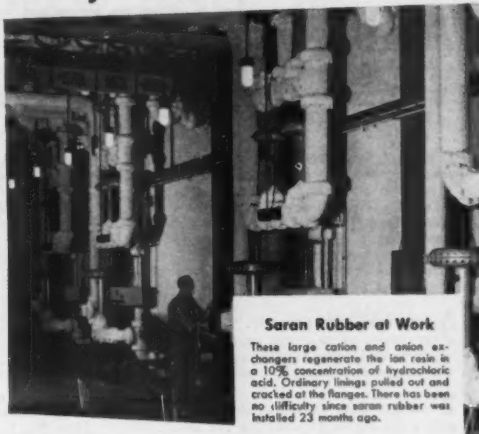
**BULKLEY, DUNTON  
PROCESSES, Inc.**

**295 Madison Avenue  
New York 17, N. Y.**

**Pacific Coast—Security Building  
Pasadena, Calif.**



## costly corrosion checked!



### Saran Rubber at Work

These large cation and anion exchangers regenerate the ion resin in a 10% concentration of hydrochloric acid. Ordinary linings pulled out and cracked at the flanges. There has been no difficulty since saran rubber was installed 23 months ago.

## with SARAN RUBBER TANK LINING

Industries handling, storing or transporting corrosives can lower operating costs and increase the life expectancy of costly equipment by installing saran rubber tank lining. The high degree of both chemical and abrasive resistance makes saran rubber an outstanding lining where resistance to grease, many solvents, acids and other chemicals is required.

Saran rubber can be applied easily, effectively and economically by experienced tank lining applicators located strategically throughout the country. Get in touch with an applicator today by contacting your nearest Saran Lined Pipe Company office.



*for tank cars  
storage tanks  
tank trailers  
processing tanks  
production tanks*

### RELATED PRODUCTS

Saran rubber molded parts—stoppers, diaphragms, various-sized moldings for valves, instruments, etc.  
Saran lined steel pipe—corrosion-resistant pipe that gives long-term operation with minimum maintenance.

Write to the Distributor:

## SARAN LINED PIPE COMPANY

2415 BURDETTE AVENUE • FERRDALE, MICHIGAN

Offices in: New York • Boston • Pittsburgh • Tulsa • Philadelphia • Chicago  
Portland • Indianapolis • San Francisco • Houston • Denver • Los Angeles • Seattle  
Cleveland • Charleston, S. C. • Toronto • Montreal

Saran Lined Pipe Company  
2415 Burdette Avenue  
Ferrdale, Michigan

Please send me your catalog on Saran Rubber Tank Lining and Saran Rubber Molding Stocks.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



**MAGNUS-MADE**

## FABRICATED SCREEN PLATES

**for High Plate Capacity — Long Plate Life**

"Hardy" fabricated-screen plates, made by Magnus of chrome-nickel-steel or inconel, have a high-strength, thin sheet design that's specially engineered for maximum flow. About 40,000 of these plates are now in service, with performance records that prove these three important advantages:

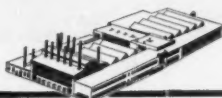
**1. Increased Plate Capacity.** The thin sheet eliminates relief milling, and with recommended arrangement, substantially increases capacity per plate.

**2. Longer Life.** Slots remain sharp, side walls highly polished for the life

of the plate. There's greatly improved corrosion resistance, too.

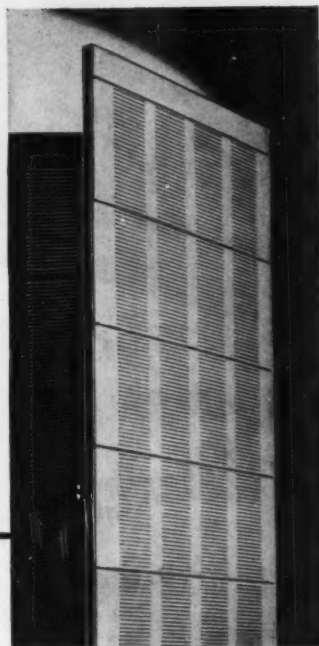
**3. High, Sustained Yield.** Fabricated screen plates assure consistent, uniform quantities of cleaner pulp. This means improved production at reduced operating costs.

Complete information is yours on request. Or if you like, we'll gladly have an engineer call.



**MAGNUS METAL CORPORATION, Fitchburg, Massachusetts**  
*Metalworkers for the Paper Trade*

SCREEN PLATES: BRONZE, CHROME-NICKEL-STEEL, AND INCONEL  
VALVES: GATE, SWING CHECK, BLOW, GLOBE, ANGLE AND "V"



Quality  
chemicals  
in  
the  
making

Soda Ash  
Salt Cake

**AMERICAN POTASH & CHEMICAL CORP.**  
3030 West 6th Street Los Angeles 54, Calif.

**Nothing Wears Like**

**GRIFFITH  
RUBBER  
MILLS**

**Rubber**

**RUBBER COVERED ROLLS** of every type and size can be handled by Griffith Rubber Mills specialists. Pioneers in the field, Griffith has developed new methods and specially designed machinery to give superior service. At Griffith the only machinery in the West for multiple drilling of suction rolls is available.

**TANKS, PIPES, FITTINGS** and other equipment are protected against chemical attack, contamination, rust and abrasion by Griffith installed protective rubber coatings. Rubber linings specially developed to meet the needs of the pulp and paper industry add years of service to irreplaceable equipment.

**DOCTOR BLADES and DECKLE STRIPS** manufactured by Griffith Rubber Mills are made from rubber compounds specifically developed to give greater efficiency and longer life.

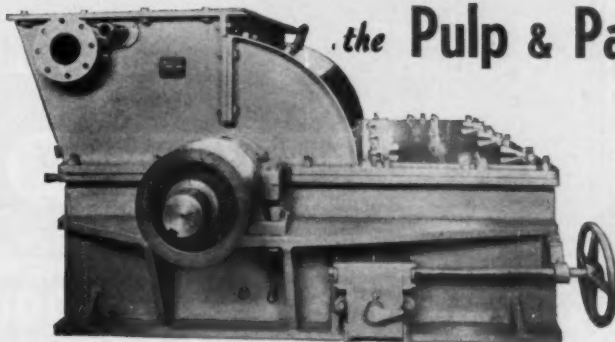
Pulp and paper mill rubber requirements are a specialty with Griffith Rubber Mills. The complete facilities of our research department and testing laboratory are available to develop solutions to your special industrial problems.

**GRIFFITH RUBBER MILLS**

Quality Rubber Products Since 1911  
2439 N. W. 22nd AVE., PORTLAND, OREGON



# ANOTHER GRUENDLER UNIT *for* the Pulp & Paper Industry!



*Wet Lap Pulper at  
Oregon Lumber Co.  
Hardboard Mill at  
Dee, Oregon*

Turbo Pulp Refiners • Knots & Rejects Shredders • Hot Lime Breakers  
Coal Crushers • Bark & Wood Hogs • Salt Cake Breakers  
Paper & Board Shredders • Pulverizers, etc.

**GRUENDLER** CRUSHER & PULVERIZER COMPANY  
MAIN OFFICE: 2915 NORTH MARKET STREET • ST. LOUIS 6, MISSOURI



## *Quick Delivery!* **STAINLESS STEEL WELD FITTINGS**

We are Pacific Coast headquarters for light-weight, stainless steel weld fittings. Sizes to 6" carried in stock, larger sizes can be fabricated immediately to your order.

### **NORTHWEST COPPER WORKS, INC.**

1360 No. River Street,  
Portland 12, Oregon

We also specialize in  
fabrications to your design

## *Serving JAPAN* **C.T. TAKAHASHI & CO.**

IMPORTERS and EXPORTERS

216-218 Third Avenue South, Seattle 4, Wash.  
Established 1898

### *Exporting:*

All Grades of Pulp

Pulp and Paper Mill Machinery and  
Supplies

Preliminary Reports, Layouts, Estimates  
and Designs for Kraft, Sulfito, Dissolving  
and Semi-Chemical Pulp Mills, Paper and  
Board Mills.

*In Japan write or telephone*

**C. T. TAKAHASHI & CO., TOKYO**

Room 808 Marunouchi Bldg.

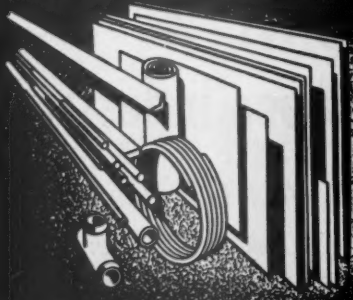
Telephone

WADA-KURA (20) 3631 or 3632

Branches:

New York  
Los Angeles

Vancouver, B.C.  
Taipei, Formosa



**COPPER · BRASS · BRONZE · STAINLESS STEEL**  
DISTRIBUTORS

SHEETS · PIPE · TUBING · BARS  
FITTINGS · VALVES · NUTS · BOLTS · NAILS

**ALASKAN COPPER & BRASS COMPANY**  
*Stainless Steel*

SEATTLE 4  
902 1st Ave. So., Et 4494

PORTLAND 14  
34 N. E. 7th Ave., Ea 6188



*This is an* **OWEN PULPWOOD GRAPPLE ·**

To handle a greater volume of pulpwood in less time and at a reduced cost, some of the world's largest Pulp and Paper Mills have installed the Owen Grapple System.

Wouldn't it be wise to think in terms of your pulpwood handling problems today, in order that you may operate the more profitable "Owen Way" tomorrow? Write for illustrated bulletin.

**The OWEN BUCKET Co.** BRANCHES: New York, Philadelphia, 6066 BREAKWATER AVE., CLEVELAND, OHIO Chicago, Berkeley, Calif.



**APPLETON FELTS**

*Design  
Finish  
Dependability  
Uniformity  
Service*

*Appleton Woolen Mills*  
APPLETON WISCONSIN



**STAINLESS STEEL VORTRAP HEADER**

**Fabrication For Pulp & Paper Mills**

Representatives:  
R. T. Barnes, Jr., 191 Kelton, San Carlos, Cal.  
Southern Corp. P. O. Box 810, Charleston, S. C.  
Ronningen Engineering Sales, Vicksburg, Mich.

**BROWN-HUTCHINSON IRON WORKS**  
1831 CLAY DETROIT 11, MICHIGAN

**PULP & PAPER'S 1952 WORLD Review Number**  
*Off the Press - - If Not a Subscriber - - Order Now!*

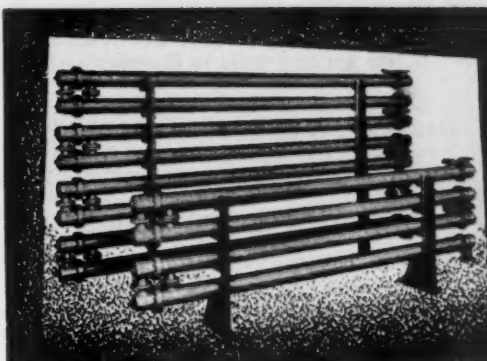
The 1952 PULP & PAPER World Review Number presents a comprehensive picture of the pulp, cellulose, paper and paperboard industries over the entire world—

Enter My Subscription to Pulp & Paper and include the World Review Number

☐ One Year \$3.00 ☐ Two Years \$5.00 ☐ Three Years \$7.00—U.S., Canada  
(Add \$1.00 per year Foreign)

NAME ..... ADDRESS .....  
CITY ..... ZONE ..... STATE .....

**PULP & PAPER**  
8-52 71 Columbia St. Seattle 4, Washington



## COPPER - BRASS - BRONZE - STAINLESS STEEL DESIGNERS AND FABRICATORS

Developed by "ALASKAN" for use in the ammonia base recovery system at the Crown Zellerbach Pilot Plant at Lebanon, Oregon, is this multipass heat exchanger of the full contra-flow principle.

The first of its kind in the Pacific Northwest . . . designed and built by ALASKAN . . . a leader in large scale engineering and fabrication in corrosion resisting metals.

## ALASKAN COPPER WORKS

3606 E. Marginal Way

Seattle 4

# SULPHUR

Many former users of sulphur have found that Sulphur Dioxide can be effectively and economically substituted for sulphur. Many industries have made this conversion and the results have been most satisfactory. Sulphur Dioxide can perhaps, be just as effectively adapted to your operation. One of our representatives would be glad to consult with you—no obligation to you, of course.

For further details,  
wire, phone or write  
the Tennessee Corporation,  
Grant Building, Atlanta, Ga.

HIGHEST  
QUALITY  
**SO<sub>2</sub>**

**TENNESSEE**

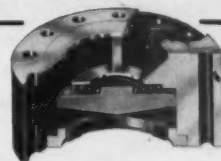


**CORPORATION**

619 Grant Building,

Atlanta, Georgia

## Looking for a SMOOTHER ? Check Valve



The  
**WILLIAMS-HAGER**

## SILENT Check-Valve . . .

Protects your piping and pumps from  
damaging "water hammer" . . . extra  
compact . . . important where space is  
limited.

## FOR EVERY INDUSTRIAL USE

Sizes: 1 to 20 inches.  
Pressures to 5000 lbs.  
Any Temperature.  
Variety of metals for  
every type of liquid,  
hot or cold, and gas,  
oil, chemicals, etc.

Write for Literature

**R. M. WADE & CO.**  
SINCE 1865

SEATTLE 4, Wash. PORTLAND 14, Ore.

WADE'S SERVICE DEPARTMENT stands ready to serve you in your  
pumping equipment needs regardless of make of pumps.



# "EXCELSIOR" FELTS

The Trademark of Felts of Superior Quality

for Every Grade of Pulp and Paper

## KNOX WOOLEN COMPANY

CAMDEN, MAINE

Pacific Coast Agents

DAN E. CHARLES AGENCY, 1331 Third Avenue, Seattle, Wash.

## RAY SMYTHE

**Pulp and Paper Mill  
Machinery and Supplies**

REPRESENTING:  
RICE BARTON CORP.—HEPPENSTALL CO.  
SHENANGO-PENN MOLD CO.  
LANGDON COLLAPSIBLE WINDER SHAFTS  
WORTMANN DUFFLE CO.  
ATWOOD-MORRILL CO.  
SMYTHE MULTIVAT FLAT SCREENS  
CARTHAGE MACHINE COMPANY  
TORK-MASTER CO., INC.  
AUTOMATIC VALVE CONTROLS  
MACBAIN VALVES—FOR OIL, AIR, WATER  
SUTHERLAND REFINER CORP.  
PULP REFINING SYSTEMS

501 PARK BUILDING, PORTLAND 5, ORE.  
Beacon 0502 & 2238

## GILBERT ENGINEERING CO. PAINTING CONTRACTORS

Painting                      Roofing  
Caulking                      Pointing  
Waterproofing              Sand Blasting  
Steam Cleaning  
Concrete Restoration  
& Preservation

709 South St.                      Utica 4, N. Y.

## SULPHITE MILL ACID PLANTS

SULPHUR BURNING PLANTS  
GAS COOLERS—SURFACE AND SPRAY TYPE  
JENSSEN TWO TOWER ACID SYSTEMS  
JENSSEN PRESSURE ACID SYSTEMS  
JENSSEN AUXILIARY PROCESS TOWERS  
RECOVERY PLANTS—COOKING ACID

SOLUBLE BASE ACID PLANTS

SEMI CHEMICAL PLANTS

JENSSEN SO<sub>2</sub> ABSORPTION SYSTEMS  
FOR BLEACH PLANT APPLICATION  
SULPHUROUS ACID PREPARATION

**G. D. JENSSEN CO. INC.,**

WATERTOWN, NEW YORK

Western Representative:  
James Brinkley Co., 417-9th Ave. So., Seattle, Wash.  
FOUNDED 1915

The Controlled Flow

## VICTORY BEATER

is manufactured by

**THE NOBLE & WOOD MACHINE CO.**

Paper Mill Machinery

Hoosick Falls      •      New York      •      U.S.A.

## MERRICK WEIGHTOMETER for Batching Chips to Digesters by Weight

Write for Bulletin No. 373

**MERRICK SCALE MFG. CO.** 185 Summer St.  
Passaic, N. J.  
Irving R. Gard & Company, Lowman Building, Seattle 4, U. S. A.

## RODERICK O'DONOGHUE

CONSULTING ENGINEER

**PULP MILLS—PAPER MILLS**

IMPROVED PROCESSES — DESIGNS — REPORTS  
420 Lexington Avenue                      New York City 17

## ALVIN H. JOHNSON & CO. INCORPORATED

**Pulp and Paper Mill**

Consulting and Designing Engineers  
Serving the Pulp & Paper Industries Since 1929

415 Lexington Ave.

New York 17, N. Y.

## NORTHWEST SEATTLE

122 Elliott Ave. West  
GA. 7700



## FILTER CO.

VANCOUVER 6, B. C.  
823 Clarke Drive  
HA. 1185

INDUSTRIAL WATER PURIFICATION PLANTS

Representing:  
Foster Wheeler Corp., Power Plant and Process Equipment  
Monterey Sand Co., Filter Sand

**J. E. SIRRINE CO.**  
Greenville, South Carolina

*Engineers*  
ESTABLISHED 1905

PAPER & PULP MILLS • WASTE DISPOSAL • TEXTILE MILLS •  
APPRAISALS • WATER PLANTS • STEAM UTILIZATION •  
STEAM POWER PLANTS • HYDRO-ELECTRIC • REPORTS



## C. M. GUEST & SONS Builders

GREENSBORO, N. C.      ANDERSON, S. C.

Paper & Pulp Mills • Waste Disposal • Water Filtration  
Steam Power Plants • Process Piping • Textile Mills  
SERVING THE INDUSTRIAL SOUTH for MORE THAN FIFTY YEARS

## QUALITY CHROMIUM PLATING

For rolls, screen plates, slice lips, etc.



**CHROMIUM CORPORATION OF AMERICA**

New York      Waterbury      Cleveland      Chicago

EMBOSSING ROLLERS

## Roehlen Engraving Works, Inc.

324 St. Paul St., ROCHESTER 5, N. Y.

MAKERS OF ENGRAVED EMBOSSING ROLLERS  
AND PLATES OF ANY TYPE AND DESCRIPTION  
WORN ROLLERS RE-ENGRAVED  
COMPLETE DESIGNING AND ENGINEERING SERVICE



## CHEMIPULP PROCESS INC.

500 WOOLWORTH BUILDING

WATERTOWN, NEW YORK

### CHEMICAL PULPING PROCESS

Hot Acid Cooking and Recovery Systems  
Chemipulp—K-C Digester Circulating Systems  
Chemipulp—K-C Improved Acid Plants  
Digester Waste Liquor  $\text{SO}_2$  Gas and Heat Recovery  
Chip Pretreatment Preparatory to Cooking

Associated with

### CHEMIPULP PROCESS LTD.

403 CRESCENT BUILDING

Pacific Coast Representative

MONTREAL, P. Q.

A. H. Lundberg

308 Orpheum Building

Seattle 1, Wash.

## HANSEL ENGINEERING COMPANY

Consulting Engineers

Specialists in Hydraulic Barking  
and Weed Preparation

1500 Westlake Avenue North

Seattle, Washington

1637 West Broadway

Vancouver, B.C.

## RALPH D. THOMAS AND ASSOCIATES, INC.

CONSULTING ENGINEERS

Complete Engineering Services

Studies—Reports—Design—Supervision

Steam and Hydro Generation

Sewage and Water Works—Industrial Processing

400 Metropolitan Building, Minneapolis 1, Minnesota

## STADLER, HURTER & COMPANY

CONSULTING ENGINEERS  
SUITE 608 DRUMMOND BUILDING

Montreal, Canada

Specializing Since 1923 in

**PULP AND PAPER MILLS**

FROM FOREST TO FINISHED PRODUCTS

A. T. HURTER, M. E. I. C.

## CARROLL, BECHTEL and LANGTRY POWER PLANT CONSULTING ENGINEERS

Division of

Commercial Testing & Engineering Co.

POWER SURVEYS, RECOMMENDATIONS, ESTIMATES

PLANS & SPECIFICATIONS, ENGINEERING SUPERVISION

Architectural & Structural Design Power Plants, Power Piping,

Electrical Distribution, Combustion Engineering, Power Testing,

Evaluations

307 N. MICHIGAN AVE., CHICAGO 1, ILLINOIS

## SANDWELL and COMPANY, LTD.

1500 West Georgia St., Vancouver, Canada

## SANDWELL and COMPANY, INC.

120 Sixth Ave. No. Seattle, Wash., U. S. A.

Consulting Engineers

## W. H. RAMBO INDUSTRIAL PLANT ENGINEER

SPECIALIZING IN

DESIGN — ESTIMATES — SUPERVISION — CONSTRUCTION  
PAPER MILL WOOD ROOMS, WOOD PRESERVATION, SAW-  
MILLS, WOODWORKING, HARDBOARD PLANTS and VENEER  
PLANTS

Loyalty Building

BEacon 5102

Portland 4, Oregon

## STEVENSON & RUBENS

CONSULTING ENGINEERS

736 Olympic National Bldg.

Seattle 4, Wash.

MU 1244

**LAYOUT AND  
STRUCTURAL DESIGNING**

BORIS R. RUBENS

JOHN H. STEVENSON

## METCALF & HARSTAD ASSOCIATES

CONSULTING ENGINEERS

POWER and WATER SUPPLY

Arctic Building

SEATTLE 4

SEneca 6323

## CHAS. T. MAIN, INC.

CONSULTING ENGINEERS

Process Studies, Design, Specifications and Engineering Supervision

**PULP AND PAPER MILLS**

Steam Hydraulic and Electrical Engineering

Reports, Consultation and Valuations

80 Federal Street

Boston 10, Mass.

## THE RUST ENGINEERING COMPANY

Engineers and Constructors

Pittsburgh, Pa.

Portland, Ore.

• Los Angeles

Complete Service for

PULP AND PAPER MILL PLANTS AND FACILITIES

MODERNIZATION, DESIGN, CONSTRUCTION, and MAINTENANCE

## PULP BLEACHING COMPANY

71 Columbia St., Seattle 4, Wash.

EQUIPMENT FOR

**CELLULOSE PURIFICATION  
AND RELATED PROCESSES**

## ROBERT AND COMPANY ASSOCIATES

96 POPLAR STREET

• ATLANTA, GEORGIA

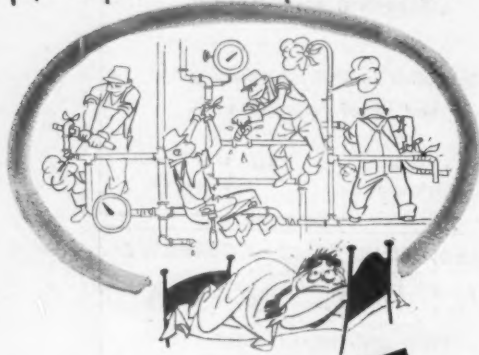
Consulting and Design Engineers to the

**PAPER AND CHEMICAL INDUSTRIES**

HAROLD R. MURDOCK, Chemical Engineer

PROCESS STUDIES • DESIGN • POWER PLANTS • INDUSTRIAL WASTE DISPOSAL

Say goodbye to nightmares about  
pipe repairs and replacements!



Install corrosion-resistant saran lined steel pipe wherever you are piping chemicals and solvents. Because saran is extremely resistant to most chemicals and solvents, such installations will give dependable, long-term service and reduce shut-downs due to pipe repairs and replacements. In addition to minimum maintenance cost saran lined steel pipe brings you another important advantage: it is easily field fabricated. No intricate tools required, no waiting for special fabrication, no costly delays. Saran lined steel pipe is manufactured by The Dow Chemical Company.

#### RELATED PRODUCTS

Saran rubber tank lining—an outstanding lining where resistance to grease, many solvents, acids and other chemicals is indicated.

Saran rubber molded parts—stoppers, diaphragms, various-sized moldings for valves, instruments, etc.

Write to the Distributor:

#### SARAN LINED PIPE COMPANY

2415 BURDETTE AVENUE • FERRISDALE, MICHIGAN

Offices in New York • Boston • Pittsburgh • Tulsa • Philadelphia • Chicago  
Portland • Indianapolis • San Francisco • Houston • Denver • Los Angeles  
Seattle • Cleveland • Charleston, S. C. • Toronto • Montreal

Saran Lined Pipe Company,  
2415 Burdette Ave., Ferrisdale, Mich.  
Please send me a copy of your catalog on  
Saran Lined Pipe, Valves and Fittings.

Name \_\_\_\_\_ Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

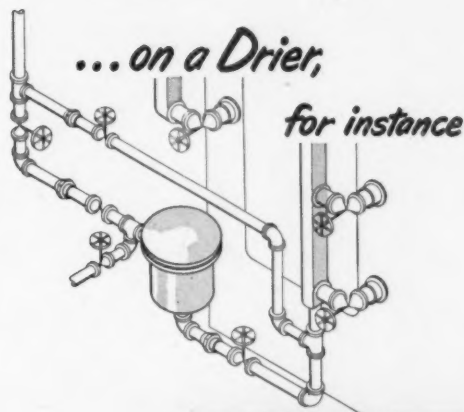


#### FIRMS YOU SHOULD KNOW Advertising Index

Adams Co., R. P. . . . .	69	Link-Belt Co. . . . .	6
Alaskan Copper & Brass Co. . . . .	98	Lockport Felt Co. . . . .	65
Alaskan Copper Works . . . . .	99	Lodding Engineering Corp. . . . .	78
Allis-Chalmers Mfg. Co. . . . .	7, 47	Lyddon & Company, Inc. . . . .	71
American Cyanamid Co. . . . .			
Industrial Chemical Div. . . . .	29	MacMillan & Bloedel Limited . . . . .	90
American Potash & Chemical Corp. . . . .	96	Magnus Metal Corp. . . . .	96
Anheuser-Busch, Inc. . . . .	57	Main, Inc., Chas. T. . . . .	101
Appleton Wire Works . . . . .	49	Mead Sales Co. . . . .	14
Appleton Woolen Mills . . . . .	98	Merrick Scale Mfg. Co. . . . .	100
		Metcalf & Harstad Associates . . . . .	101
		Midwest Fulton Machine Co. . . . .	15
Babcock & Wilcox Co. . . . .	11		
Bagley & Sewall Co. . . . .	37	Nash Engineering Co. . . . .	87
Beloit Iron Works . . . . .	33	Noble & Wood Machine Co. . . . .	100
Bird Machine Co. . . . .	23	Northwest Copper Works, Inc. . . . .	97
Black-Clawson Co. Divisions:		Northwest Filter Co. . . . .	100
Shurtle Bros. Machine Co.; Dilts			
Machine Works; Kohler System . . . . .	25	O'Donoghue, Roderick . . . . .	100
Bristol Company . . . . .	27	Ohio Knife Co. . . . .	Inside Front Cover
Brown Company . . . . .	41	Owen Bucket Co. . . . .	98
Brown-Hutchinson Iron Works . . . . .	98		
Bulkley, Duntun Organization . . . . .	35	Pacific Coast Supply Co. . . . .	84
Bulkley, Duntun Processes, Inc. . . . .	95	Pacific Gear Works . . . . .	17
Butterworth & Sons Co., H. W. . . . .	90	Pacific Gear & Tool Works . . . . .	17
		Parsons & Whittemore, Inc. . . . .	71
Cameron Machine Co. . . . .	63	Pennsylvania Salt Mfg. Co. . . . .	75
Carroll, Bechtel and Langtry . . . . .	101	Perkins-Goodwin Co. Outside Back Cover	
Chain Belt Co. . . . .	39	Puget Sound Pulp & Timber Co. . . . .	16
Chemipulp Process Inc. . . . .	101	Pulp Bleaching Co. . . . .	101
Chromium Corp. of America . . . . .	100	Pusey & Jones Corp. . . . .	58
Classified Advertising . . . . .	84, 86, 87		
Corn Products Sales Co. . . . .	88		
Crane Company . . . . .	Inside Back Cover		
DeLaval Steam Turbine Co. . . . .	73	Rambo, W. H. . . . .	101
Dilts Machine Works . . . . .	25	Raymond Service, Inc., Charles P. . . . .	84
Dominion Engineering Co., Ltd. . . . .	52	Rice Barton Corp. . . . .	13
Dorr Company . . . . .	55	Robert & Company Associates . . . . .	101
Dow Chemical Co. . . . .	95, 102	Roehlen Engraving Works, Inc. . . . .	100
DuPont de Nemours & Co., E. I. . . . .	8	Roslund, John V. . . . .	94
		Ross Engineering Corp., J. O. . . . .	61
		Rust Engineering Co. . . . .	101
Eastwood-Nealley Corp. . . . .	80		
Electric Steel Foundry Co. . . . .	31	Sandwell & Company . . . . .	101
Elliott Company . . . . .	4	Saran Lined Pipe Co. . . . .	102
		Saran Rubber Co. . . . .	95
Fabri-Valve Co. of America . . . . .	92	Schultz, C. D. . . . .	84
Fairbanks, Morse & Co. . . . .	92	Shurtle Bros. Machine Co. . . . .	25
Foxboro Company . . . . .	43	Shuler & Benninghofen . . . . .	86
		Sirrine Co., J. E. . . . .	100
General Electric Co. . . . .	50 & 51	Smythe, Ray . . . . .	100
Gilbert Engineering Co. . . . .	100	Spencer Chemical Co. . . . .	18
Gilbert & Nash Co. . . . .	93	Sprout, Waldron & Co. . . . .	67
Goslin-Birmingham Mfg. Co. . . . .	93	Stadler, Hurter & Co. . . . .	101
Gottesman & Company . . . . .	2	Stevenson & Rubens . . . . .	101
Griffith Rubber Mills . . . . .	96	Stone & Webster Engineering Corp. . . . .	64
Gruendler Crusher & Pulverizer Co. . . . .	97	Sumner Iron Works . . . . .	77
Guest & Sons, C. M. . . . .	100	Sutherland Refiner Corp. . . . .	10
Hansel Engineering Co., Ltd. . . . .	101	Takahashi & Co., C. T. . . . .	97
Hermann Mfg. Co. . . . .	94	Tennessee Corp. . . . .	99
Hooker Electrochemical Co. . . . .	12	Texas Gulf Sulphur Co. . . . .	45
		Thew Shovel Co. . . . .	76
		Thomas & Associates, Inc., Ralph D. . . . .	101
Inflico Incorporated . . . . .	85	Valley Iron Works . . . . .	83
International Nickel Co. . . . .	5		
Jenssen Co., Inc., G. D. . . . .	100	Wade & Co., R. M. . . . .	99
Johnson & Co., Alvin H. . . . .	100	Warren Steam Pump Co. . . . .	81
Jones & Sons Co., E. D. . . . .	19	Western Gear Works . . . . .	17
		Weyerhaeuser Timber Co. . . . .	1
		Whiting Corp., Swenson Evaporator Co. . . . .	54
Knox Woolen Co. . . . .	99		
Kohler System . . . . .	25	Yarnall-Waring Co. . . . .	9

# Example of Steam Trap

## Durability



### THE INSTALLATION

On heavy-duty, steam-heated tumbler-type drier at American Linen Supply Company, Cincinnati.

### THE HISTORY

A high discharge capacity trap was needed to operate this drier 16 hours daily under heavy loads, with 125 psi. steam. Specifications called for rapid, fully automatic condensate removal to insure fast warm-ups and a steady flow of hot, dry steam to the drier. Naturally, the lowest possible trap maintenance cost was also wanted.

The choice was a Crane 150-Pound Inverted Open Float Steam Trap, carefully selected for adequate drainage capacity, and above all, properly installed.

In service more than 8 years and never needing any repairs or new parts, the Crane trap has given complete satisfaction. Total maintenance expense: periodic routine inspection only.

*The Complete Crane Line Meets All Valve Needs. That's Why*

*More Crane Valves Are Used Than Any Other Make!*

## CRANE VALVES

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Illinois  
Branches and Wholesalers Serving All Industrial Areas

**VALVES • FITTINGS • PIPE • PLUMBING • HEATING**

### TRAP SERVICE RATINGS

#### SERVICE LIFE:

*More than 8 years - Heavy duty*

#### SUITABILITY:

*High discharge capacity*

#### MAINTENANCE COST:

*None - Routine inspection only*

#### SPECIAL FEATURES:

*Simple, dependable mechanism*

#### OPERATING RESULTS:

*Fast warm-ups - Steady even heat*

#### PRICE:

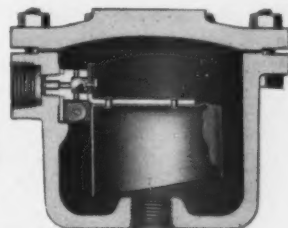
*Good Buy*

#### AVAILABILITY:

*Stock item in Crane line*

### THE TRAP

Crane Iron Body Inverted Open Float Steam Trap, for 1 to 300 pounds saturated steam working pressures. Small and compact in all sizes, yet has high discharge capacity. Patented ball-type seating gives positive pressure seal. Simple operating mechanism with only one moving unit assures durable, trouble-free performance. See your Crane Catalog or your Crane Representative for complete data on these highly efficient traps.



# PULP

**Perkins-Goodwin Co.**

*Established 1846*

CHICAGO, ILLINOIS

30 ROCKEFELLER PLAZA, NEW YORK

LUFKIN, TEXAS

STOCKHOLM, SWEDEN

# PAPER